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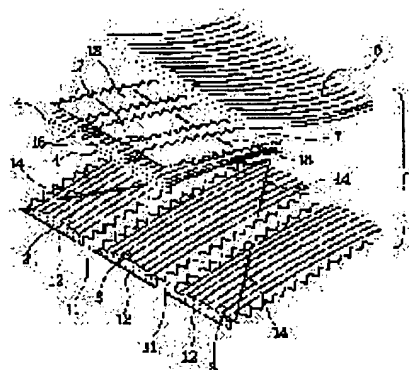
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## (54) ARTICLE FOR CLEANING



(57)Abstract:

PROBLEM TO BE SOLVED: To solve a problem wherein as conventional disposable articles for cleaning are formed of nonwoven fabrics, they have flat shapes and are inferior in dust collecting effect and in those articles in which brush parts are formed of only fibers, the brush parts can not be retained as the fibers are entangled.

SOLUTION: The brush part 26 of the article for cleaning is formed of pieces of narrow tablets 12 and 17 of the nonwoven fabric and bundles 3, 4 and 6 of fibers. As there exists the pieces of the narrow paper tables between them, the bundles of the fibers are hardly entangled together. In addition, as the bundles 4 of the fibers and the pieces of the narrow tablets 17 are bonded by a bonding part 18, the bundles 4 of the fibers are hardly shrunk and shape retaining properties of the brush part 26 is excellent.

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## CLAIMS

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[Claim(s)]

[Claim 1] Goods for cleaning characterized by forming said brush section in the goods for cleaning which have the brush section by two or more pieces of a strip of paper formed long and slender with the elasticity sheet, and the fiber bundle.

[Claim 2] Goods for cleaning according to claim 1 to which the sheet which the sheet of at least one sheet which has said two or more pieces of a strip of paper, and said fiber bundle of at least one layer pile up, and has said piece of a strip of paper, and said fiber bundle are joined partially.

[Claim 3] Goods for cleaning according to claim 1 to which the sheet of at least one sheet which has said two or more pieces of a strip of paper, and said fiber bundle of at least one layer put on a base material sheet, and said base material sheet, the sheet which has said piece of a strip of paper, and said fiber bundle are joined partially.

[Claim 4] Goods for cleaning according to claim 3 with which the long and slender piece of a strip of paper is formed in said base material sheet.

[Claim 5] Goods for cleaning according to claim 2 to 4 with which the sheet which has said piece of a strip of paper has appeared in the outermost surface by the side of said cleaning side.

[Claim 6] Goods for cleaning according to claim 2 to 4 with which said fiber bundle has appeared in the outermost surface by the side of said cleaning side.

[Claim 7] Said fiber bundles are goods for cleaning according to claim 1 to 6 which are the range of the predetermined die length of a joint with said base material sheet, and fiber has fixed.

[Claim 8] Said fiber bundles are the larger goods for cleaning according to claim 1 to 7 than the superintendent officer of the fiber bundle to which two or more layers are prepared and the superintendent officer of the fiber bundle nearest to said base material sheet is located in a front-face side rather than it.

[Claim 9] Goods for cleaning according to claim 3 or 4 with which the maintenance field for holding said base material sheet on said base material sheet is prepared.

[Claim 10] Goods for cleaning according to claim 9 with which the maintenance space for equipping a holder is formed in said maintenance field.

[Claim 11] Said fiber bundles are goods for cleaning according to claim 10 joined to said base material sheet by the junction line which puts on the front face of a base material sheet in which said maintenance space is formed, and is prolonged along the path of insertion of the holder to said maintenance space.

[Claim 12] Goods for cleaning characterized by the sheet of two or more sheets with which at least one sheet has two or more long and slender pieces of a strip of paper piling up, and each sheet being joined by two or more joints, and preparing a fiber bundle in the front face of said sheet which the maintenance space across which it faced by said joint is formed between said sheets, and forms said maintenance space, and joining said fiber bundle to said sheet by said joint.

[Claim 13] Goods for cleaning according to claim 12 with which the brush section is formed by said piece of a strip of paper and said fiber bundle.

[Claim 14] Goods for cleaning according to claim 12 or 13 with which the fiber brush section in which a part of fiber bundle [ at least ] located in the front face of said sheet is prolonged from said joint, and it has the free end is formed.

[Claim 15] It is the component for cleaning according to claim 12 to 14 to which two of said longwise maintenance space are formed in parallel, said fiber bundle is arranged at the sense to which the stretch direction of the fiber crosses said two maintenance space, it is the outside of the middle of said two maintenance space, and two maintenance space, and said sheet and said fiber bundle are joined.

[Claim 16] Goods for cleaning according to claim 1 to 15 to which said piece of a strip of paper and said fiber bundle which adjoins this piece of a strip of paper are partially joined in the part in the middle of said piece of a strip of paper.

[Claim 17] The sheets which have said piece of a strip of paper are goods for cleaning according to claim 1 to 16 which are the nonwoven fabric which contains thermoplastic fiber at least in a part, or a thermoplastics film.

[Claim 18] Said fiber bundles are the goods for cleaning according to claim 1 to 17 which can be welded to at least a part including thermoplastic fiber.

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## DETAILED DESCRIPTION

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### [Detailed Description of the Invention]

[0001]

[Field of the Invention] With respect to the goods for cleaning which this invention is held at a holder and used as a mop for cleaning, or are used, holding by hand and which can be thrown away, the prehension effectiveness of dust or dust is especially related with the goods for cleaning which have the rigid high brush section high again.

[0002]

[Description of the Prior Art] The goods for cleaning of the mop molds for [ conventional ] indoor cleaning etc. have that main in which the brush section was formed by twist yarn, such as cotton. However, this kind of goods for cleaning have a high manufacturing cost, and, therefore, the use as a disposable product is difficult. Moreover, adhesion oils, such as a liquid paraffin, are applied to the front face of said twist yarn, and since it is what adsorbs dust with these adhesion oils, said twist yarn itself does not have the prehension force of dust. Therefore, there is a fault with the low prehension capacity of dust with the fine hair of hair etc.

[0003] Moreover, there are some which were indicated by JP,9-154791,A and JP,9-38009,A as disposable goods for cleaning. It enables it to equip holders, such as a mop, with these, and is formed with a nonwoven fabric, or if the perimeter part of a nonwoven fabric is cut long and slender, it cooks, and the section is formed.

[0004]

[Problem(s) to be Solved by the Invention] However, the goods for cleaning formed in said each official report with the nonwoven fabric of a publication are cheap, and although it is possible to wipe off detailed dust since the goods for cleaning itself are superficial although it is suitable for throwing away, the prehension capacity of comparatively big dust is low.

[0005] In the brush section of only fiber, although there are some which furthermore formed the brush section by fiber as goods for disposable cleaning, since the rigidity of the brush section is low, fiber becomes entangled during cleaning, or fiber carries out round-head relaxation, the part which functions as the brush section substantially is compressed, and there is a fault which cannot fully demonstrate the dust uptake effectiveness which fiber has.

[0006] This invention is for solving the above-mentioned conventional technical problem, and it has the brush section by which the uptake capacity of dust is high and the configuration was stabilized, and aims at offering the goods for cleaning which can be formed by low cost.

[0007]

[Means for Solving the Problem] The 1st this invention is characterized by forming said brush section by two or more pieces of a strip of paper formed long and slender with the elasticity sheet, and the fiber bundle in the goods for cleaning which have the brush section.

[0008] In above-mentioned this invention, fine dust can be caught by the fiber bundle of

the brush section, and a debt of fiber can be controlled by the piece of a strip of paper, and the cleaning effectiveness can be demonstrated by the piece of a strip of paper itself. Moreover, the brush section has rigidity by having a piece of a strip of paper, and it comes to have firmness to external force.

[0009] For example, the sheet of at least one sheet which has said two or more pieces of a strip of paper, and the fiber bundle of at least one layer pile up, and the sheet which has said piece of a strip of paper, and said fiber bundle are joined partially.

[0010] Or the sheet of at least one sheet which has said two or more pieces of a strip of paper, and said fiber bundle of at least one layer put on a base material sheet, and said base material sheet, the sheet which has said piece of a strip of paper, and said fiber bundle are joined partially.

[0011] Thus, dispersion in a fiber bundle and a debt can be controlled by being joined, and the prehension capacity of dust is heightened even in the field contiguous to a base material sheet.

[0012] Moreover, the long and slender piece of a strip of paper may be formed also in said base material sheet. Since the adhesion over the cleaned field of various configurations can be raised by this, the prehension capacity of dust can be improved further.

[0013] The sheet which has said piece of a strip of paper can constitute the goods for cleaning of this invention as what has appeared in the outermost surface by the side of said cleaning side. In this case, since the rigid high piece of a strip of paper is comparatively located in the outermost surface, it is hard coming to generate the phenomenon of solidifying involving a fiber bundle during cleaning, and equal to use of long duration.

[0014] However, said fiber bundle may appear in the outermost surface by the side of said cleaning side. In this case, since a fiber bundle enters to the shape of fine toothing and adhesion becomes good, the prehension capacity of fine dust improves.

[0015] In this case, what fiber has fixed in the range of the die length predetermined in said fiber bundle from the joint with said base material sheet is desirable.

[0016] Thus, by fixing the fiber of a fiber bundle in the predetermined die-length range from a joint at least, even if the fiber bundle has appeared in the outermost surface, by friction at the time of cleaning, the fiber of a fiber bundle can twine or it can prevent solidifying.

[0017] Moreover, two or more layers of said fiber bundle may be prepared, and it may be larger than the superintendent officer of the fiber bundle to which the superintendent officer of the fiber bundle nearest to said base material sheet is located in a front-face side rather than it.

[0018] Thus, if a superintendent officer is changed, a thick fiber bundle will be located near the base material sheet, and it can prevent that a base material sheet is exposed to a cleaning side at the time of cleaning, and a feeling of a cushion can be obtained at the time of cleaning.

[0019] Moreover, the maintenance field for holding said base material sheet on said base material sheet may be prepared. Thereby, said maintenance field can be held now by hand.

[0020] For example, the maintenance space for equipping a holder is formed in said maintenance field. Thus, it is prevented by equipping with a holder that a user's hand and

clothes become dirty. However, said maintenance space may be held by hand.

[0021] Moreover, said fiber bundle is put on the front face of a base material sheet in which said maintenance space is formed, and may be joined to said base material sheet by the junction line prolonged along the path of insertion of the holder to said maintenance space. Thus, the cleaning feel which became what the fiber bundle put on the front face of a base material sheet, and the hardness of a holder did not affect it at the cleaned section at the time of cleaning, but was excellent in the part in which maintenance space is formed forming is acquired.

[0022] The sheet of two or more sheets with which at least one sheet has two or more long and slender pieces of a strip of paper piles up the goods for cleaning of the 2nd this invention. A fiber bundle is prepared in the front face of said sheet which each sheet is joined by two or more joints, and the maintenance space across which it faced by said joint is formed between said sheets, and forms said maintenance space, and it is characterized by joining said fiber bundle to said sheet by said joint.

[0023] In above-mentioned this invention, since a cleaning function can be demonstrated by front flesh-side both sides, it can be used, without caring about a cleaning side. Moreover, continuous duty time amount can be improved by using it one side every.

[0024] By forming the brush section by said piece of a strip of paper and said fiber bundle also in this case, fine dust can be caught, and a debt of fiber can be controlled, and the cleaning effectiveness can be demonstrated by the piece of a strip of paper itself.

[0025] Moreover, the fiber brush section in which a part of fiber bundle [ at least ] located in the front face of said sheet is prolonged from said joint, and it has the free end may be formed. By said fiber brush section, the function to pay dust can be demonstrated and cleaning capacity can be improved.

[0026] For example, two of said longwise maintenance space are formed in parallel, said fiber bundle is arranged at the sense to which the stretch direction of the fiber crosses said two maintenance space, it is the outside of the middle of said two maintenance space, and two maintenance space, and said sheet and said fiber bundle may be joined.

[0027] Thereby, maintenance space is equipped with a holder, and cleaning becomes possible, without soiling a user's hand and clothes. Moreover, if the both ends of maintenance space are carrying out opening, a cleaning side can be used for homogeneity by changing the path of insertion of a holder.

[0028] In said each invention, it is desirable that said piece of a strip of paper and said fiber bundle which adjoins this piece of a strip of paper are partially joined in the part in the middle of said piece of a strip of paper.

[0029] Thus, if constituted, a fiber bundle comes to move together with the piece of a strip of paper, and a fiber bundle moves independently, and fiber can become entangled or it can prevent that fiber solidifies.

[0030] Moreover, as for the sheet which has said piece of a strip of paper, it is desirable that they are the nonwoven fabric which contains thermoplastic fiber at least in a part, or a thermoplastics film. Thereby, junction by thermal melting arrival is attained and can form a joint easily and quickly. Moreover, when a nonwoven fabric is joined by hot blast, a sheet is rich in rigidity and elasticity.

[0031] Moreover, as for said fiber bundle, it is desirable for the weld which contains thermoplastic fiber at least in a part to be possible. A sheet and a fiber bundle can be joined now easily and certainly by the heat seal by making it said sheet contain

thermoplastic fiber similarly.

[0032]

[Embodiment of the Invention] The perspective view in which drawing 1 shows the gestalt of operation of the goods for cleaning of the 1st this invention from a cleaning side side, the partial perspective view which drawing 2 expands the brush section of said goods for cleaning, and is shown, the perspective view in which drawing 3 shows the goods for cleaning from a background, the perspective view drawing 4 and drawing 5 indicate the goods for cleaning to be according to each class, and drawing 6 are the partial perspective views showing the most desirable example of the layer structure of the goods for cleaning.

[0033] The illustration top-face side of the goods 1 for cleaning shown in drawing 1 and drawing 2 is a cleaning side side. Here, a cleaning side side shows the side which meant being turned to a cleaned object at the time of use.

[0034] The laminating of said goods 1 for cleaning is carried out to the order of the sheet 5 with which the 1st fiber bundle 3, the 2nd fiber bundle 4, and the piece of a strip of paper were formed, and the 3rd fiber bundle 6 sequentially from the bottom at the cleaning side side of the base material sheet 2. These goods 1 for cleaning are directions (MD) to which the ingredient of above-mentioned each class continues at the time of manufacture, and the direction where a shorter side is prolonged is supplied at it. Each class from said base material sheet 2 to the 3rd fiber bundle 6 is joined to one by all the layer junction lines 7 prolonged in the direction which intersects perpendicularly with MD.

[0035] Said base material sheet 2 and sheet 5 are a nonwoven fabric which was formed or contains thermoplastic fiber for thermoplastic fiber (thermal melting arrival nature fiber). PE (polyethylene), PP (polypropylene), PET (polyethylene terephthalate) fiber, the bicomponent fiber of PE and PET, and the bicomponent fiber of PE and PP, for example, the heart, are [ PET or PP, and the sheath of said thermoplastic fiber ] bicomponent fibers of the sheath-core structure of PE etc., and a nonwoven fabric is a thermal bond nonwoven fabric, a span bond nonwoven fabric, or a span ball-race nonwoven fabric. Moreover, said base material sheets 2 and sheets 5 may be for example, PE film and PP film with a thermoplastics film. Or said base material sheet 2 and sheet 5 may be a lamination sheet of a nonwoven fabric and a resin film.

[0036] Moreover, a sheet becomes what is rich in rigidity and elasticity and is desirable when said base material sheet 2 and the sheet 5 with which the piece of a strip of paper was formed are constituted from a nonwoven fabric formed at the Ayr through process of joining said thermoplastic fiber by hot blast. When arranging the sheet 5 which has a piece of a strip of paper especially to the outermost surface by the side of a cleaning side (example shown in drawing 6 ), it is desirable to use said sheet 5 as the nonwoven fabric formed at the Ayr through process.

[0037] Said 1st fiber bundle 3, the 2nd fiber bundle 4, and the 3rd fiber bundle 6 are the bundle (layer) of thermoplastic fiber, or a bundle of the fiber by which thermoplastic fiber was contained at least in the part, and thermal melting arrival of the fiber is not mutually carried out in parts without especially explanation, such as a joint shown later. The continuous glass fiber bundle to which filamentation of said fiber bundle was carried out from the tow is used. That is, fiber is made to separate, supplying the tow of continuous glass fiber to MD continuously (carrying out filamentation), and it is formed

by considering as predetermined width of face and thickness. Moreover, it piles up on a sheet material, said fiber bundle and said sheet material are joined partially, and said predetermined width of face and the fiber bundle of thickness can obtain the following goods for cleaning by cutting said fiber bundle and sheet material together according to the dimension of the goods for cleaning.

[0038] The continuous glass fiber bundle by which filamentation is carried out from a tow is manufactured from PE, PP, Ne (nylon), rayon, etc. Also in this, it is desirable that PP or PET, and a sheath use [ the heart ] the bicomponent fiber of PE.

[0039] Moreover, 1 - 50dtex is desirable still more desirable, and the fineness of the continuous glass fiber which forms said fiber bundle is 2 - 10dtex. Moreover, the fiber of the fineness from which each fiber bundle differs may be included.

[0040] Moreover, the slit of the film is carried out to the shape of a tape as said fiber bundle, the thermoplastic film called the flat yarn made to extend to a lengthwise direction and split yarn may be written and divided in the direction of orientation of resin, and the direction which intersects perpendicularly, and that to which the film which became fibrous is joined in the shape of a mesh may be used. Or as a fiber bundle, a nonwoven fabric with a low fiber consistency may be used with bulky [ of an Ayr through nonwoven fabric etc. ].

[0041] Moreover, the fiber which forms a fiber bundle has a desirable crimped staple. if a crimped staple is used -- a fiber bundle -- \*\* -- it becomes high and becomes the structure of being further easy to incorporate dust and dust into a crimp part. It is desirable to use the crimped staple bundle especially formed from tow fiber.

[0042] The structure and its laminating procedure of each class which forms said goods 1 for cleaning are explained. Drawing 4 (A) shows said base material sheet 2. As for the base material sheets 2, such as a span bond nonwoven fabric and an Ayr through nonwoven fabric, the both-sides section of central field 2a serves as piece formation field 2b of a strip of paper, and 2b. Although outside 2B is turned upward and drawing 3 shows the base material sheet 2 of said goods 1 for cleaning, the maintenance sheet 8 has put on this outside 2B over said piece formation field 2b of a strip of paper, and 2b from said central field 2a. This maintenance sheet 8 is formed with nonwoven fabrics, such as span bond and an Ayr through nonwoven fabric, as well as the base material sheet 2. However, this maintenance sheet 8 may be formed with the resin film etc. MD lay length dimension of said sheet [ base material sheet 2 and maintenance sheet 8 ] corresponds, and, as for the width method of the direction which intersects perpendicularly with MD, the maintenance sheet 8 is short rather than the base material sheet 2.

[0043] After the maintenance sheet 8 has put on outside 2B of said base material sheet 2, two or more elongated-shaped pieces 12 and 12 of a strip of paper which the cut lines 11 and 11 of a notched configuration (serration configuration) and -- were deeply cut by said piece formation field 2b of a strip of paper and 2b, and were divided into them by said base material sheet 2 and the maintenance sheet 8 by the aforementioned cut line 11, and -- are formed. Here, the piece of a strip of paper in this invention points out what was started from the sheet so that it might have width of face of at least 2mm and might become a long and slender configuration.

[0044] As shown in drawing 4 (B), the 1st fiber bundle 3 puts on surface 2A by the side of the cleaning side of the base material sheet 2 with which the piece 12 of a strip of paper was formed. At this time, a fiber bundle 3 is widened in the direction which fiber is



prolonged toward MD with said piece 12 of a strip of paper, and intersects perpendicularly with MD, and the 1st fiber bundle 3 is piled up so that a fiber bundle 3 may serve as fixed \*\* on surface 2A of the base material sheet 2.

[0045] And said 1st fiber bundle 3 located in the said maintenance sheet [ which is located in the base material sheet 2 and outside 2B ] 8 and surface 2A side is joined to one by the junction line 13 and the junction line 14. This junction is a heat seal, an ultrasonic seal, etc., and welding junction of the base material sheet 2, the maintenance sheet 8, and the 1st fiber bundle 3 is carried out in said junction lines 13 and 14.

[0046] Said junction lines 13 and 13 of a pair open spacing in the direction of MD, and are formed in parallel in accordance with the boundary line of said central field 2a, and piece formation field 2b of a strip of paper and 2b. Moreover, said junction line 14 is formed in a zigzag configuration (serration configuration) in said piece formation field 2b of a strip of paper, and 2b.

[0047] Consequently, after the 1st fiber bundle 3 has put on said piece 12 of a strip of paper formed in the base material sheet 2 and the maintenance sheet 8, this piece 12 of a strip of paper and 1st fiber bundle 3 will be in the condition of having been partially joined by said junction line 14 which crosses a part aslant in the middle of the longitudinal direction of the piece 12 of a strip of paper, so that it may expand to drawing 2 and may be shown. It is hard to dissociate scatteringly and the 1st fiber bundle 3 restrained by said junction line 14 stops being able to become entangled easily. However, since the piece 12 of a strip of paper and the 1st fiber bundle 3 are partially joined by the junction line 14, the 1st fiber bundle 3 can be moved with a certain amount of degree of freedom on the piece 12 of a strip of paper, and the uptake effectiveness of dust or dust can be demonstrated by the 1st fiber bundle 3.

[0048] Drawing 5 shows the condition of having carried out the laminating of the 2nd fiber bundle 4 and sheet 5. Said sheets 5 are a nonwoven fabric or resin films, such as the same span bond as the base material sheet 2, or Ayr through, and the flat-surface configuration and area of them are the same as that of said base material sheet 2.

[0049] A central part is junction field 5a, and the both-sides section of said sheet 5 is the piece formation fields 5b and 5b of a strip of paper. In said piece formation fields 5b and 5b of a strip of paper, the cut lines 16 and 16 of a notched configuration (serration configuration) and -- are deeply cut towards MD from the edge of a sheet 5, and two or more long and slender pieces 17 and 17 of a strip of paper and -- are formed in MD separated by the aforementioned cut line 16.

[0050] If the die length of the piece 17 of a strip of paper of the sheet 5 which shows the die length of the piece 12 of a strip of paper of the base material sheet 2 shown in drawing 4 (A) to L1, and shows a width method to W1 and drawing 5 is set to L2 and a width method is set to W2, by  $L2 > L1$ , it is  $W1 > W2$  and the piece 17 of a strip of paper serves as an elongated shape from the piece 12 of a strip of paper. Moreover, width of face is 2-50mm, and each pieces 12 and 17 of a strip of paper are formed in the range of magnitude whose die length is 10-100mm.

[0051] And the laminating of the 2nd fiber bundle 4 is carried out to the rear-face 5B side of said sheet 5. In a production process, rear-face 5B of a sheet 5 is made into facing up, and the 2nd fiber bundle 4 piles up on this rear-face 5B. A fiber bundle 4 is in the condition that fiber was turned to MD to which the piece 17 of a strip of paper extends, is widened in the direction which intersects perpendicularly with MD, and it is put on rear-

face 5B of said sheet 5 so that it may become fixed \*\*.

[0052] And in the part, said piece 17 of a strip of paper and 2nd fiber bundle 4 are partially joined by the joint 18 in the middle of the direction where said piece 17 of a strip of paper is prolonged. Welding of this joint 18 is carried out with a heat seal or an ultrasonic seal. As shown in drawing 5, said joint 18 is formed every piece in two or more pieces 17 of a strip of paper located in a line in the direction which intersects perpendicularly with MD. That is, the piece 17 of a strip of paper in which the joint 18 was formed, and the piece 17 of a strip of paper which does not have a joint 18 are located in a line by turns. However, all the pieces 17 of a strip of paper may have a joint 18.

[0053] As shown in the partial enlarged drawing of drawing 2, the 2nd fiber bundle 4 is put on the bottom of the piece 17 of a strip of paper, it is a part in the middle of the piece 17 of a strip of paper, and since the piece 17 of a strip of paper and the 2nd fiber bundle 4 are partially joined by the joint 18, the 2nd fiber bundle 4 becomes entangled, or it is in the condition that were hard coming to carry out round-head relaxation, and the configuration was held by the piece 17 of a strip of paper.

[0054] In the culmination of the production process of these goods 1 for cleaning, the 2nd layered product by which the laminating of the 2nd fiber bundle 4 and sheet 5 which are shown in drawing 5 was carried out, and they were joined on the 1st layered product by which the laminating of the 1st fiber bundle 3 was carried out to the base material sheet 2 shown in drawing 4 (B) and the maintenance sheet 8 list, and it was joined to them piles up. At this time, on the 1st fiber bundle 3, as the 2nd fiber bundle 4 rides, said the 1st and 2nd layered product pile up.

[0055] And as shown in drawing 1, the 3rd fiber bundle 6 piles up on surface 5A of said sheet 5 of the 2nd layered product. This 3rd fiber bundle 6 is piled up so that it may be made for fiber to turn to MD, it may be widened in the direction which intersects perpendicularly with MD and may serve as almost uniform \*\*. And it is joined by said all layer junction lines 7 along Chuo Line which extends in the direction of MD together, and the maintenance sheet 8, the base material sheet 2, the 1st fiber bundle 3, the 2nd fiber bundle 4, a sheet 5, and the 3rd fiber bundle 6 are unified. All these layer junction lines 7 are welding seal lines, such as a heat seal and an ultrasonic seal, by all these layer junction lines 7, each class is unified and welding junction of them is carried out.

[0056] As shown in drawing 1 and drawing 2, these goods 1 for cleaning are the structure where the brush section 26 was formed in the cleaning side side of the base material sheet 2, and right-and-left both sides, and this brush section 26 is formed with the piece 12 of a strip of paper of the base material sheet 2, the 1st fiber bundle 3, the 2nd fiber bundle 4, the piece 17 of a strip of paper of a sheet 5, and the aggregate of the 3rd fiber bundle 6.

[0057] First, if a floor, furniture, etc. are wiped, while being able to carry out uptake of fine dust and dust by the 3rd fiber bundle 6 which has appeared in the front face and being able to carry out the uptake of fine dust and dust by fiber bundles 3, 4, and 6 in the brush section 26 in the cleaning side side shown upward by drawing 1, the function in which the pieces 12 and 17 of a strip of paper also pay dust etc. is demonstrated. At this time, it is possible to catch the dust paid by the pieces 12 and 17 of a strip of paper by fiber bundles 3, 4, and 6.

[0058] Moreover, since the piece 17 of a strip of paper intervenes between the 2nd fiber

bundle 4 and the 3rd fiber bundle 6, when having repeated cleaning, the 2nd fiber bundle 4 and 3rd fiber bundle 6 do not become entangled with it mutually, and the gestalt of the brush section 26 can be maintained for a long period of time.

[0059] Furthermore, the brush section 26 stops being crushed easily and the 1st fiber bundle 3 and 2nd fiber bundle 4 are excellent in the firmness of the brush section 26, even if fiber bundles 3 and 4 do not have round-head relaxation and being involved and perform prolonged cleaning, since it is partially joined to the piece 12 of a strip of paper, and the piece 17 of a strip of paper, respectively.

[0060] As shown in drawing 3, while the base material sheet 2 and the maintenance sheet 8 are joined by the junction line 13 and the junction line 13 in the external surface side of the completed goods 1 for cleaning Since said all layer junction lines 7 are formed in the middle of the junction line 13 and the junction line 13, in the maintenance field of the external surface of said central field 2a, two parallel maintenance space 20 and 20 is formed between the junction line 13 and all the layer junction lines 7 between the base material sheet 2 and the maintenance sheet 8.

[0061] therefore, it is shown in drawing 3 -- as -- two forks -- said goods 1 for cleaning can be held from an external surface side with the holder 21 of structure. Said holder 21 has the insertion sections 22 and 22 and the grasping section 23 which were divided into two forks. The insertion sections 22 and 22 are inserted into said maintenance space 20 and 20. And it can clean by holding the grasping section 23.

[0062] It is possible to adopt various structures for making it the goods 1 for cleaning not have to dedrop easily from a holder 21 in the case of cleaning.

[0063] First, it is arranged finely, and much acute angle tip serrate heights 22a is formed in the inferior surface of tongue of said insertion sections 22 and 22, and it enables it to insert the insertion sections 22 and 22 in the maintenance space 20 and 20, where this heights 22a is turned to the base material sheet 2. Coefficient of friction of heights 22a serrate in the condition of having been inserted, and the base material sheet 2 becomes large, and it can prevent that the goods 1 for cleaning are easily omitted by this.

[0064] Or the stop fastener 24 is fixed to the end face part of the insertion sections 22 and 22 in a holder 21. The lobe of the shape of a hook with the fine stop fastener 24 and a mushroom configuration is formed. By being stopped by rear-face 2B of the base material sheet 2, this stop fastener 24 can prevent omission of the goods 1 for cleaning from a holder 21.

[0065] Moreover, the connection member 25 is formed in a part for the point of one forked insertion section 22 free [ rotation ], the insertion sections 22 and 22 are inserted in the maintenance space 20 and 20, when the point section of the insertion sections 22 and 22 penetrated and escapes from the maintenance space 20 and 20 and comes out, the connection member 25 is rotated and the connection member 25 is stopped at the tip of the insertion section 22 of another side by concavo-convex fitting etc. Also by this, omission of the goods 1 for cleaning from a holder 21 can be prevented.

[0066] It is based on said heights 22a, the stop fastener 24, and the connection member 25, and escapes, and a stop means may be equipped with the all, and even if few either, it may be equipped with the means whose number is one. In addition, said holder 21 which falls out and has a stop means is not restricted to the goods 1 for cleaning of this invention, but no matter it may be what goods for cleaning, it can be used.

[0067] Moreover, said goods 1 for cleaning may be made to hold to a holder 21 with the

sense which rotated the goods 1 for cleaning 180 degrees from the sense shown in drawing 3 , when it is in the condition which equipped with the goods 1 for cleaning from the direction of drawing 3 to the holder 21, and cleaning is performed, consequently the goods 1 for cleaning become dirty locally, since it is a symmetry configuration as shown in drawing 3 . Thus, by using it, changing the sense, it inclines and each part of the goods 1 for cleaning can be used for homogeneity that there is nothing.

[0068] In addition, if the insertion section 22 of said holder 21 is formed for the material which deforms easily, the configuration of the goods 1 for cleaning held at the holder 21 can be incurvated to arbitration. Moreover, the grasping section 23 is made into elastic structure, and it may be made to clean by lengthening the grasping section 23 for a long time.

[0069] Moreover, in said goods 1 for cleaning, since a fiber bundle comes to be located in the maintenance space 20 and cleaning side side of the holder 21 inserted into 20 by the fiber bundle of at least 1 being joined by said junction lines 13 and 13, the cleaning feeling which the hardness of a holder did not affect it in a cleaned field at the time of the increase of the thickness by the side of a cleaning side and cleaning, but was excellent at it is acquired.

[0070] Drawing 6 is the perspective view showing goods 1A for cleaning of the modification of the gestalt of operation of said 1st this invention.

[0071] Goods 1A for cleaning shown in drawing 6 changes the laminating sequence of each class of the goods 1 for cleaning shown in drawing 1 thru/or drawing 5 .

[0072] The outermost layer base material sheet 15 formed with the nonwoven fabric obtained at the Ayr through process was formed in this goods 1 for cleaning A, and the base material sheet 2 formed in the front face of this outermost layer base material sheet 15 with the span bond nonwoven fabric etc. has put on it. And the sheet 5 with which the 1st fiber bundle 3, the 2nd fiber bundle 4, and the 3rd fiber bundle 6 piled up sequentially from the bottom, and the piece 17 of a strip of paper was formed at the maximum \*\*\*\* on surface 2A which is the cleaning side side of said base material sheet 2 has piled up. Although this sheet 5 is formed with a nonwoven fabric or a resin film, being formed with an Ayr through nonwoven fabric is desirable.

[0073] And the outermost layer base material sheet 15, the base material sheet 2, and the 1st fiber bundle 3 are mutually joined by the same junction lines 13 and 13 as having been shown in drawing 4 (B). And even the sheet 5 which has the piece 17 of a strip of paper from the outermost layer base material sheet 15 is joined together by all the layer junction lines 7 formed in the center section.

[0074] Moreover, the 3rd fiber bundle 6 and the sheet 5 on it may be joined the same with having been shown in drawing 5 by the junction line 18 located in the middle of the piece 17 of a strip of paper, and the piece 17 of a strip of paper and a part of fiber of the 3rd fiber bundle 6 under it may be unified partially. Moreover, like drawing 4 (A), two or more pieces 12 of a strip of paper may be formed in the base material sheet 2, and as shown in drawing 4 (B), said piece 12 of a strip of paper and 1st fiber bundle 3 may be joined by the junction line 14 of a zigzag configuration.

[0075] Moreover, the maintenance sheet 8 may be joined by the external surface of the outermost layer base material sheet 15 like drawing 3 , and the maintenance space 20 and 20 may be formed in it between the outermost layer base material sheet 15 and the maintenance sheet 8.

[0076] Since a sheet 5 will hit this cleaned section preferentially when the cleaned sections, such as a floor and furniture, are wiped with goods 1 for cleaning A shown in drawing 6, since the sheet 5 which has a strip of paper 17 is formed in the outermost surface by the side of a cleaning side, fiber of each fiber bundles 3, 4, and 6 located in the bottom of it can twine, and there can be, or it can prevent becoming massive by friction with the cleaned section. If a part of fiber of the 3rd fiber bundle 6 is especially joined to the piece 17 of a strip of paper located on it by the junction line 18, the fiber of the 3rd fiber bundle 6 cannot twine easily, and it will be hard to become massive. Moreover, if rigidity forms the sheet 5 of the maximum \*\*\*\* with a flexible high Ayr through nonwoven fabric, it will be hard to transform the brush section 26 formed by the piece of a strip of paper, and the fiber bundle by friction with the cleaned section, and a form will stop being able to collapse easily also due to prolonged use.

[0077] Moreover, as shown in drawing 6, in that by which the piece 17 of a strip of paper appears, the one where each piece 17 of a strip of paper is longer is good for the maximum \*\*\*\* by the side of a cleaning side. Therefore, that in which the cutting plane line 16 which separates the piece 17 of a strip of paper has resulted to the near to all the layer junction lines 7 is desirable. Or in the condition before said cutting plane line 16 crosses the whole region of a sheet 5 in the direction of MD and is joined by all the layer junction lines 7, the piece 17 of a strip of paper may be separated mutually.

[0078] Although the components for cleaning of this invention can wipe off big dust and small dust effectively by the brush section 26 formed for said piece of a strip of paper and fiber of said fiber bundle, if the piece 17 of a strip of paper formed in the maximum \*\*\*\* by the side of a cleaning side with the Ayr through nonwoven fabric etc. is located as shown in drawing 6, even if it uses it for a long period of time, they can maintain the form of the brush section 26.

[0079] As for the goods 1 for cleaning shown in drawing 1 thru/or drawing 5, the 3rd fiber bundle 6 is located in the outermost surface by the side of a cleaning side about this point. Therefore, a possibility that a debt and a lump may arise is in the 3rd fiber bundle 6 by prolonged friction with the cleaned section.

[0080] Then, in said goods 1 for cleaning shown in drawing 1 thru/or drawing 5, it can prevent that a superfluous debt and a superfluous lump arise for fiber at the time of eradication by what you apply resin, such as oils, a wax, and HMA (hot melt), as a binder, and is made to check the degree of freedom to a motion of fiber to the 3rd fiber bundle 6 which has appeared in the maximum \*\*\*\* (dispersion in fiber is controlled).

[0081] As range which applies the resin in this case, the spray coating cloth of said binder may be carried out only to the front face by the side of the cleaning side of a fiber bundle 6, only the fiber of the front face of the 3rd fiber bundle 6 may be fixed, a binder is partially applied even to the predetermined range [ lines / 7 / said / all / layer junction ], and the fiber of free one end of the 3rd fiber bundle 6 is good also as a free condition.

\*\*\*\*\* of the fiber of a fiber bundle 6 can be prevented without reducing the prehension effectiveness of the dust by the fiber bundle 6, if it does in this way. Moreover, as for these binders, what is a solid-state in ordinary temperature is desirable.

[0082] For example, if the wax to a fiber bundle 6 carries out comparatively when hardening with a wax, it is desirable that the mass ratio to the 3rd fiber bundle 6 considers as 0.5 - 25%. At 0.5% or less, a debt of fiber cannot be prevented effectively, and fiber solidifies firmly that it is 25% or more too much, and fiber does not fully nap, but the

prehension effectiveness of dust falls.

[0083] Moreover, when viscosity of HMA is high, although it is good, in order that fiber may twine conversely, it is desirable [ \*\*\*\*\* ] to use HMA with low viscosity. Or a wax and HMA with low viscosity may be mixed.

[0084] In addition, a debt of fiber may be prevented by hardening again, after melting the fiber of a fiber bundle 6 not with the approach of applying resin to a fiber bundle 6 but with a solvent and heat. Also in this case, only the end face of a fiber bundle 6 is hardened strength, a debt is prevented, and you may enable it to demonstrate the piloerection effectiveness by leaving the degree of freedom for a point of a fiber bundle.

[0085] Furthermore, in each of the 2nd fiber bundle 4 of goods 1A for cleaning shown in drawing 6 , and the 3rd fiber bundle 6, the fiber of each fiber bundle may be joined by the binder or welding like the above.

[0086] Moreover, in said goods 1 for cleaning shown in drawing 1 , also by not joining the 3rd fiber bundle 6 only by all the layer junction lines 7, but joining said 3rd fiber bundle 6 to the sheet 5 or the base material sheet 2 under it by other junction lines which open said all layer junction lines 7 and spacing, and are located, the fiber of the 3rd fiber bundle 6 twines and generating of \*\*\*\* can be prevented.

[0087] Moreover, in the both sides of goods 1A for cleaning which show the goods 1 for cleaning and drawing 6 which are shown in drawing 1 , it is desirable to make the superintendent officer of the 1st fiber bundle 3 nearest to the base material sheet 2 larger than the 2nd fiber bundle 4 and 3rd fiber bundle 6 which are located on it. When are done in this way, and prolonged cleaning was repeated, and the piece of a strip of paper and fiber bundle of the brush section 26 twine or it becomes massive, the base material sheet 2 can prevent that do not expose from the brush section 26 and this base material sheet 2 hits the cleaned section directly.

[0088] The partial perspective view in which drawing 7 shows the goods 30 for cleaning of the 2nd this invention, and drawing 8 are the sectional view.

[0089] In these goods 30 for cleaning, two or more piece of strip of paper 31a which is suitable in the direction of MD is formed in a sheet 31 and the both-sides sections, such as a nonwoven fabric. Moreover, piece of strip of paper 32a is formed also like the both-sides section of other sheets 32 put on said sheet 31. These pieces 31a and 32a of a strip of paper are formed by putting two or more cut lines into the both-sides section of said sheets 31 and 32.

[0090] A fiber bundle 33 puts on the sheet 31 bottom, a fiber bundle 34 piles up on a sheet 32, and welding junction of sheets 31 and 32 and the fiber bundles 33 and 34 is carried out by the central junction line 35 and the flank junction lines 36 and 36 at one. The brush sections 37 and 37 are formed in the outside of said flank junction lines 36 and 36 with the aggregate with said piece of strip of paper 31a and piece of strip of paper 32a, and fiber bundles 33 and 34.

[0091] The part pinched by the flank junction line 36 and the flank junction line 36 serves as the maintenance field 38, and two maintenance space 39 and 39 separated by the central junction line 35 between the sheet 31 and the sheet 32 is formed in this maintenance field 38. The insertion sections 22 and 22 of the holder 21 as shown in these maintenance space 39 and 39 at drawing 3 are inserted. Or without forming the central junction line 35, comparatively large maintenance space may be formed between the flank junction line 36 and the flank junction line 36, and the holder of a flat configuration

may be inserted in this maintenance space.

[0092] Furthermore, in the maintenance field 38, in middle with each junction lines 35 and 36, the cutting plane line 41 prolonged in the direction which intersects perpendicularly with MD opens fixed spacing, and is formed in the intermission, and sheets 31 and 32 and fiber bundles 33 and 34 are cut by this cutting plane line 41 together.

[0093] Consequently, in the maintenance field 38 of front flesh-side both sides of the goods 30 for cleaning, the fiber brush section 42 to which fiber extends from the junction lines 35 and 36 is formed in the part in which said cutting plane line 41 is formed. Moreover, in the part in which the cutting plane line 41 between a cutting plane line 41 and a cutting plane line 41 is not formed, the fiber bridge 43 which goes across the junction line 35 and the junction line 36, and extends is formed.

[0094] In these goods 30 for cleaning, since the brush sections 37 and 37 prolonged in the both-sides section are the aggregates of fiber bundles 33 and 34 and the pieces 31a and 32a of a strip of paper, the rigidity of the brush section 37 whole can be high, can pay dust and dust by the pieces 31a and 32a of a strip of paper, and can catch dust etc. by fiber bundles 33 and 34.

[0095] Moreover, in the maintenance field 38, the dust which could demonstrate the function in which the fiber brush section 42 formed by the fiber bundle 34 cut by the cutting plane line 41 pays dust, and was paid can be caught on the fiber bridge 43. Therefore, these goods 30 for cleaning can demonstrate not only the cleaning function in the brush sections 37 and 37 but the cleaning function in the maintenance field 38 in front flesh-side both sides, and can perform effective cleaning in the condition of having turned in each direction.

[0096] Moreover, as shown in drawing 8, the layer 44 of the large fiber bundle of the superintendent officer who does not have a cutting plane line 41, or an Ayr through nonwoven fabric is formed between said sheet 31 and the fiber bundle 33 which has said fiber brush section 42, and the layer 45 of the large fiber bundle of the superintendent officer who does not have a cutting plane line 41, or an Ayr through nonwoven fabric may intervene between a sheet 32 and the fiber bundle 34 which has said fiber brush section 42.

[0097] Drawing 9 is the perspective view showing the goods 50 for cleaning of the gestalt of other operations of the 3rd this invention. It is put into the cut line of plurality [ goods / 50 / these / for cleaning / section / of a sheet 51 / both-sides ], two or more piece of strip of paper 51a is formed, and two or more piece of strip of paper 52a is formed also like the both-sides section of a sheet 52. A fiber bundle 53 puts on the sheet 51 bottom, a fiber bundle 54 puts on the sheet 52 bottom, and welding junction of a sheet 51, a sheet 52, a fiber bundle 53, and the fiber bundle 54 is carried out by the junction lines 55 and 56 prolonged in parallel at one.

[0098] On both sides of said junction lines 55 and 56, the brush section 57 by the aggregate of piece of strip of paper 51a, piece of strip of paper 52a and a fiber bundle 53, and a fiber bundle 54 is formed.

[0099] Between the junction line 55 and the junction line 56, maintenance space is formed between the sheet 51 and the sheet 52. Although a holder 61 is inserted in this maintenance space, if a holder 61 is equipped as the goods 50 for cleaning are twisted at this time, the brush section 57 can form the three-dimensional brush section 57 prolonged

spirally.

[0100] Since the brush section 57 is prolonged over cleaning a slit etc. in all the perimeter directions, these goods 50 for cleaning can make the prehension effectiveness of dust or dust high.

[0101] In addition, in the gestalt of operation of drawing 7, you may be the structure where the fiber bundle was further inserted between piece of strip of paper 31a of a sheet 31, and piece of strip of paper 32a of a sheet 32. You may be the structure where similarly the fiber bundle was further inserted also in the gestalt of operation shown in drawing 9 between piece of strip of paper 51a of a sheet 51, and piece of strip of paper 52a of a sheet 52.

[0102] And in the gestalt of operation of drawing 7 and drawing 9, this piece of a strip of paper and fiber bundle may be partially joined in the part in the middle of the longitudinal direction of the piece of a strip of paper.

[0103] Moreover, in the gestalt of said the operation of each, fiber itself becomes easy to carry out uptake of the dust to a fiber bundle being a crimped staple. Moreover, if it joins to a sheet and fiber is cut with a sheet after that where it turned to MD the fiber by which filamentation was carried out, such as fiber and split yarn, and it is extended from a tow, fiber will carry out crimp and the direction of a fiber bundle will serve as short structure from the piece of a strip of paper in the brush section. If it does in this way, cleaning of raising the eradication function of dust or dust by the piece of a strip of paper, and catching the wiped-away dust with a crimped staple can be performed now, and the cleaning function by the aggregate of fiber and the piece of a strip of paper can be demonstrated effectively.

[0104] Moreover, the adsorption prehension effectiveness of dust can be heightened by applying a \*\*\*\* agent to a fiber bundle or the piece of a strip of paper. \*\*\*\* agents are a surfactant, a mineral oil, a wax, etc. Or acrylic adhesives and hot melt adhesive which weakened adhesive strength may be applied.

[0105] Moreover, matter, such as a moisturizer, others, for example, a deodorant, and an antimicrobial agent, can be made to contain. [ agent / aforementioned / arrival dust ]

[0106] Furthermore, when elastic shrinkage characteristics were given to the sheet between the junction lines and junction lines which are formed in a maintenance field in the gestalt of each operation and it is made to hold to a holder, it can stick to a holder and the goods for cleaning dedrop come to be hard from a holder.

[0107] Moreover, in the gestalt of each operation, the nonwoven fabric used for the sheet which has a piece of a strip of paper may not be restricted to what was formed by span bond or the Ayr through method, but may be formed by thermal bond, a span ball race, point bond, a melt blow, stitch bonding, chemical bond, needle punch, etc. Moreover, it may replace with a nonwoven fabric and you may be a material processible in the shape of [ , such as urethane, sponge, textile fabrics, a network, and WARIFU, ] a strip of paper.

[0108] Moreover, when the sheet which has a piece of a strip of paper is formed with the nonwoven fabric, in the ease of using when combining with a fiber bundle, or the point on a processing technique, that whose thickness a superintendent officer is 0.5-5mm in 10 - 100 g/m<sup>2</sup> is desirable. Moreover, as for the width of face of the direction of MD of a nonwoven fabric, it is desirable that it is 80-250mm.

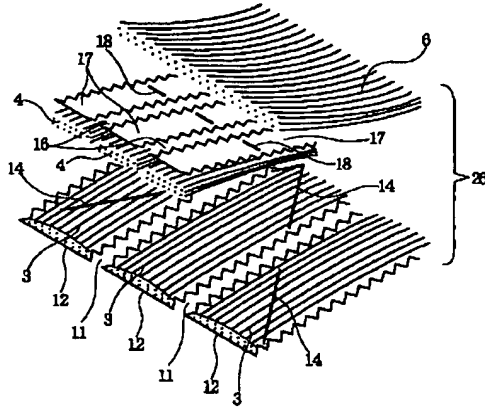
[0109]

[Effect of the Invention] As mentioned above, since the brush section is formed by the



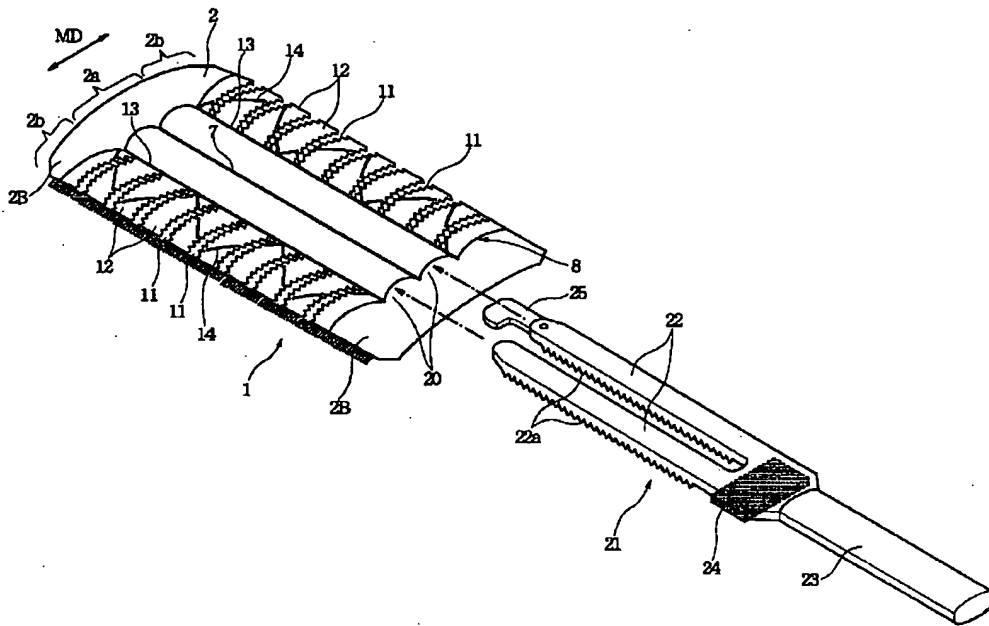


图 2



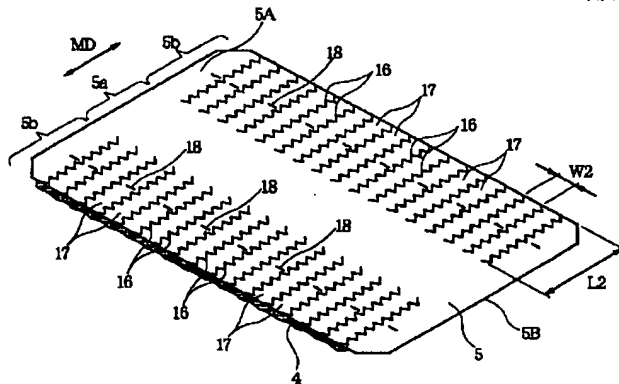
[Drawing 3]

图 3



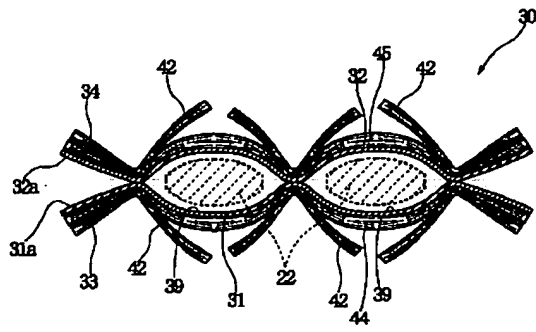
[Drawing 5]

图 5



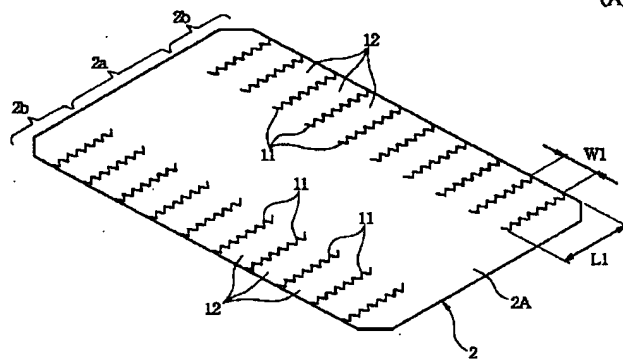
[Drawing 8]

図 8

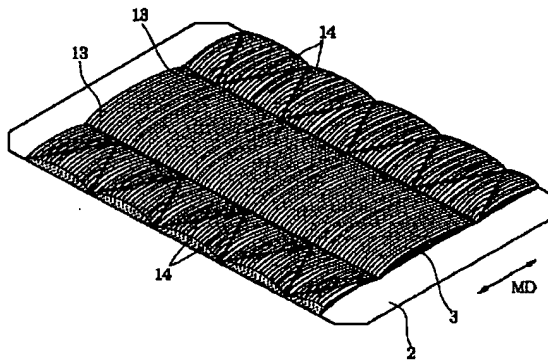


[Drawing 4]

図 4  
(A)

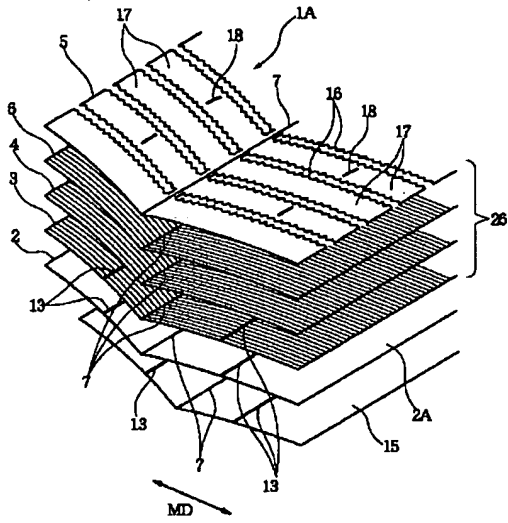


(B)



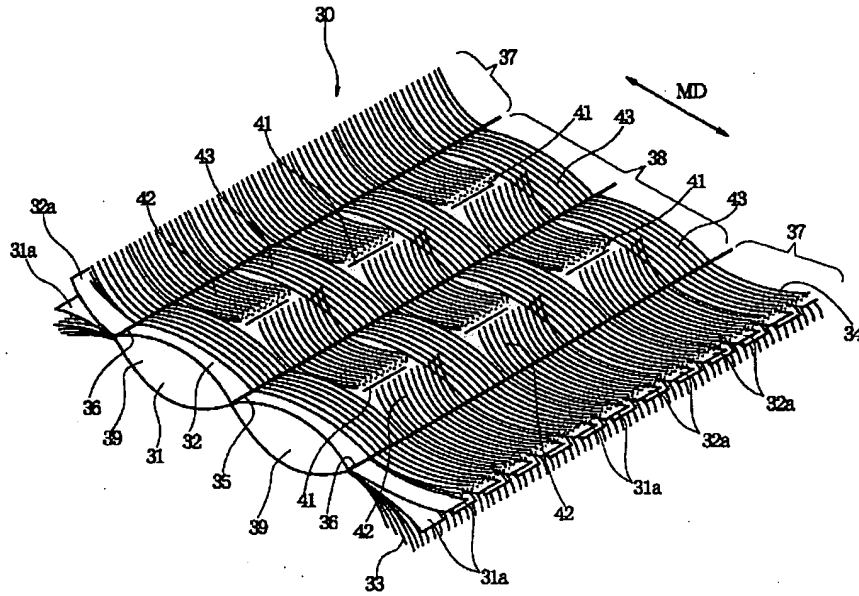
[Drawing 6]

图 6

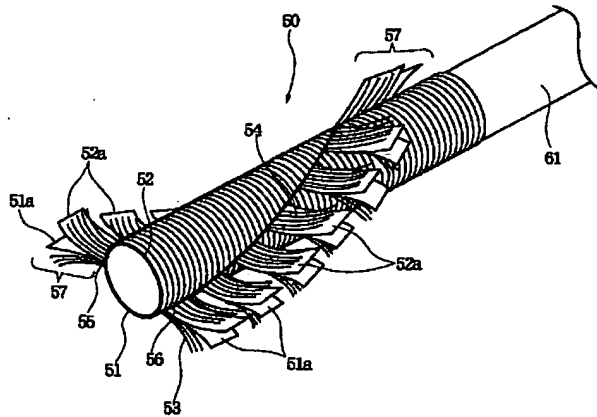


[Drawing 7]

图 7



[Drawing 9]




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[Translation done.] \* NOTICES \*

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- 3.In the drawings, any words are not translated.

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## CORRECTION OR AMENDMENT

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[Kind of official gazette] Printing of amendment by the convention of 2 of Article 17 of Patent Law

[Section partition] The 2nd partition of the 1st section

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A47L 13/20 B

[Procedure revision]

[Filing Date] November 5, Heisei 16 (2004. 11.5)

[Procedure amendment 1]

[Document to be Amended] Specification

[Item(s) to be Amended] Claim

[Method of Amendment] Modification

[The contents of amendment]

[Claim(s)]

[Claim 1]

In the goods for cleaning which have the brush section,

It has the elasticity base material sheet in which welding junction is possible, the maintenance sheet in which welding junction is possible, and the fiber bundle which contains welding nature fiber at least in a part,

Said base material sheet has two or more long and slender pieces of a strip of paper formed between two or more cut lines deeply cut from the edge, and the aforementioned cut line and a cut line,

Said fiber bundle puts on one field of said base material sheet, said maintenance sheet puts on the field of another side, and welding junction of said base material sheet and said fiber bundle, and said maintenance sheet is carried out by two or more joints which cross the fiber of said fiber bundle,

Goods for cleaning characterized by being classified by said joint between said base material sheets and said maintenance sheets, forming in it two maintenance space which a holder can insert free [ attachment and detachment ], and forming the brush section by said piece of a strip of paper, and the fiber bundle prolonged from said joint to the method of outside.

[Claim 2]

They are the goods for cleaning according to claim 1 with which the elasticity piece sheet of a strip of paper in which welding junction is possible is prepared, this piece sheet of a strip of paper has two or more long and slender pieces of a strip of paper formed between two or more cut lines deeply cut from the edge, and the aforementioned cut line and a cut line, said fiber bundle is inserted with said base material sheet and said piece sheet of a strip of paper, and welding junction of said base material sheet and said fiber bundle, and said piece sheet of a strip of paper is carried out.

[Claim 3]

Goods for cleaning according to claim 2 with which said piece sheet of a strip of paper appears in the outermost surface by the side of said maintenance sheet and reverse when said base material sheet is in a flat condition.

[Claim 4]

Goods for cleaning according to claim 1 with which said fiber bundle appears in the outermost surface by the side of said maintenance sheet and reverse when said base material sheet is in a flat condition.

[Procedure amendment 2]

[Document to be Amended] Specification

[Item(s) to be Amended] 0007

[Method of Amendment] Modification

[The contents of amendment]

[0007]

[Means for Solving the Problem]

In the goods for cleaning with which this invention has the brush section,  
It has the elasticity base material sheet in which welding junction is possible, the  
maintenance sheet in which welding junction is possible, and the fiber bundle which  
contains welding nature fiber at least in a part,

Said base material sheet has two or more long and slender pieces of a strip of paper  
formed between two or more cut lines deeply cut from the edge, and the aforementioned  
cut line and a cut line,

Said fiber bundle puts on one field of said base material sheet, said maintenance sheet  
puts on the field of another side, and welding junction of said base material sheet and said  
fiber bundle, and said maintenance sheet is carried out by two or more joints which cross  
the fiber of said fiber bundle,

It is characterized by being classified by said joint between said base material sheets and  
said maintenance sheets, forming in it two maintenance space which a holder can insert  
free [ attachment and detachment ], and forming the brush section by said piece of a strip  
of paper, and the fiber bundle prolonged from said joint to the method of outside.

[Procedure amendment 3]

[Document to be Amended] Specification

[Item(s) to be Amended] 0009

[Method of Amendment] Deletion

[The contents of amendment]

[Procedure amendment 4]

[Document to be Amended] Specification

[Item(s) to be Amended] 0010

[Method of Amendment] Deletion

[The contents of amendment]

[Procedure amendment 5]

[Document to be Amended] Specification

[Item(s) to be Amended] 0011

[Method of Amendment] Deletion

[The contents of amendment]

[Procedure amendment 6]

[Document to be Amended] Specification

[Item(s) to be Amended] 0012

[Method of Amendment] Deletion

[The contents of amendment]

[Procedure amendment 7]

[Document to be Amended] Specification

[Item(s) to be Amended] 0013

[Method of Amendment] Modification

[The contents of amendment]

[0013]

When said base material sheet is in a flat condition, said piece sheet of a strip of paper can constitute the goods for cleaning of this invention as what appears in the outermost surface by the side of said maintenance sheet and reverse. In this case, since the rigid high piece of a strip of paper is comparatively located in the outermost surface, it is hard coming to generate the phenomenon of solidifying involving a fiber bundle during cleaning, and equal to use of long duration.

[Procedure amendment 8]

[Document to be Amended] Specification

[Item(s) to be Amended] 0014

[Method of Amendment] Modification

[The contents of amendment]

[0014]

However, when said base material sheet is in a flat condition, said fiber bundle may appear in the outermost surface by the side of said maintenance sheet and reverse. In this case, since a fiber bundle enters to the shape of fine tothing and adhesion becomes good, the prehension capacity of fine dust improves.

[Procedure amendment 9]

[Document to be Amended] Specification

[Item(s) to be Amended] 0019

[Method of Amendment] Deletion

[The contents of amendment]

[Procedure amendment 10]

[Document to be Amended] Specification

[Item(s) to be Amended] 0020

[Method of Amendment] Modification

[The contents of amendment]

[0020]

Moreover, since the maintenance space for equipping a holder is formed, it is prevented by equipping maintenance space with a holder that a user's hand and clothes become dirty. However, said maintenance space may be held by hand.

[Procedure amendment 11]

[Document to be Amended] Specification

[Item(s) to be Amended] 0021

[Method of Amendment] Deletion

[The contents of amendment]

[Procedure amendment 12]

[Document to be Amended] Specification

[Item(s) to be Amended] 0022

[Method of Amendment] Deletion

[The contents of amendment]

[Procedure amendment 13]

[Document to be Amended] Specification



[Item(s) to be Amended] 0023  
[Method of Amendment] Deletion  
[The contents of amendment]

[Procedure amendment 14]  
[Document to be Amended] Specification  
[Item(s) to be Amended] 0024  
[Method of Amendment] Deletion  
[The contents of amendment]

[Procedure amendment 15]  
[Document to be Amended] Specification  
[Item(s) to be Amended] 0025  
[Method of Amendment] Deletion  
[The contents of amendment]

[Procedure amendment 16]  
[Document to be Amended] Specification  
[Item(s) to be Amended] 0026  
[Method of Amendment] Deletion  
[The contents of amendment]

[Procedure amendment 17]  
[Document to be Amended] Specification  
[Item(s) to be Amended] 0027  
[Method of Amendment] Deletion  
[The contents of amendment]

[Procedure amendment 18]  
[Document to be Amended] Specification  
[Item(s) to be Amended] 0028  
[Method of Amendment] Deletion  
[The contents of amendment]

[Procedure amendment 19]  
[Document to be Amended] Specification  
[Item(s) to be Amended] 0029  
[Method of Amendment] Deletion  
[The contents of amendment]

[Procedure amendment 20]  
[Document to be Amended] Specification  
[Item(s) to be Amended] 0088  
[Method of Amendment] Modification  
[The contents of amendment]  
[0088]

The partial perspective view and drawing 8 which show the goods 30 for cleaning with which drawing 7 serves as an example of reference are the sectional view.

[Procedure amendment 21]

[Document to be Amended] Specification

[Item(s) to be Amended] 0097

[Method of Amendment] Modification

[The contents of amendment]

[0097]

Drawing 9 is the perspective view showing the goods 50 for cleaning which are the examples of reference of further others.

It is put into the cut line of plurality [ goods / 50 / these / for cleaning / section / of a sheet 51 / both-sides ], two or more piece of strip of paper 51a is formed, and two or more piece of strip of paper 52a is formed also like the both-sides section of a sheet 52. A fiber bundle 53 puts on the sheet 51 bottom, a fiber bundle 54 puts on the sheet 52 bottom, and welding junction of a sheet 51, a sheet 52, a fiber bundle 53, and the fiber bundle 54 is carried out by the junction lines 55 and 56 prolonged in parallel at one.

[Procedure amendment 22]

[Document to be Amended] Specification

[Item(s) to be Amended] 0102

[Method of Amendment] Modification

[The contents of amendment]

[0102]

And in the example of reference of drawing 7 and drawing 9, this piece of a strip of paper and fiber bundle may be partially joined in the part in the middle of the longitudinal direction of the piece of a strip of paper.

[Procedure amendment 23]

[Document to be Amended] Specification

[Item(s) to be Amended] drawing 1

[Method of Amendment] Modification

[The contents of amendment]

[Drawing 1]

The perspective view showing the gestalt of operation of the goods for cleaning of this invention,

[Procedure amendment 24]

[Document to be Amended] Specification

[Item(s) to be Amended] drawing 6

[Method of Amendment] Modification

[The contents of amendment]

[Drawing 6]

The perspective view showing the modification of the goods for cleaning,

[Procedure amendment 25]

[Document to be Amended] Specification

[Item(s) to be Amended] drawing 7

[Method of Amendment] Modification

[The contents of amendment]

[Drawing 7]

The perspective view showing the goods for cleaning of the example of reference,

[Procedure amendment 26]

[Document to be Amended] Specification

[Item(s) to be Amended] drawing 9

[Method of Amendment] Modification

[The contents of amendment]

[Drawing 9]

The perspective view showing the goods for cleaning of the example of reference of further others,

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[Translation done.]

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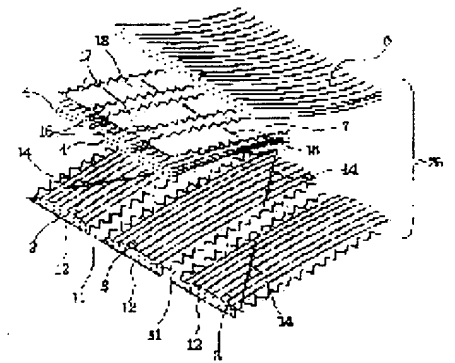
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(54) ARTICLE FOR CLEANING

(57)Abstract:

PROBLEM TO BE SOLVED: To solve a problem wherein as conventional disposable articles for cleaning are formed of nonwoven fabrics, they have flat shapes and are inferior in dust collecting effect and in those articles in which brush parts are formed of only fibers, the brush parts can not be retained as the fibers are entangled.

SOLUTION: The brush part 26 of the article for cleaning is formed of pieces of narrow tablets 12 and 17 of the nonwoven fabric and bundles 3, 4 and 6 of fibers. As there exists the pieces of the narrow paper tables between them, the bundles of the fibers are hardly entangled together. In addition, as the bundles 4 of the fibers and the pieces of the narrow tablets 17 are bonded by a bonding part 18, the bundles 4 of the fibers are hardly shrunk and shape retaining properties of the brush part 26 is excellent.



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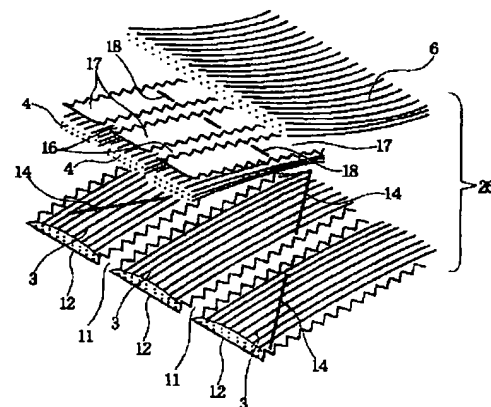
(54) 【発明の名称】 清掃用物品

(57) 【要約】

【課題】 従来の使い捨て用の清掃用物品は、不織布で形成されているため、平坦形状で埃の捕捉効果が劣っていた。また繊維のみで刷毛部を形成したものでは、繊維が絡まって刷毛部を保形できない。

【解決手段】 清掃用物品の刷毛部26は、不織布の短冊片12、17と、繊維束3、4、6により形成されている。間に短冊片があるために繊維束どうしが絡みあいにくい。また繊維束4と短冊片17とが接合部18により接合されているため、繊維束4が縮みにくく、刷毛部26の保形性に優れる。

図2



## 【特許請求の範囲】

【請求項1】 刷毛部を有する清掃用物品において、前記刷毛部が、軟質なシートで細長く形成された複数の短冊片と、繊維束とで形成されていることを特徴とする清掃用物品。

【請求項2】 複数の前記短冊片を有する少なくとも1枚のシートと、少なくとも1層の前記繊維束とが重ねられて、前記短冊片を有するシートと前記繊維束とが部分的に接合されている請求項1記載の清掃用物品。

【請求項3】 複数の前記短冊片を有する少なくとも1枚のシートと、少なくとも1層の前記繊維束とが基材シートに重ねられて、前記基材シートと前記短冊片を有するシートおよび前記繊維束とが部分的に接合されている請求項1記載の清掃用物品。

【請求項4】 前記基材シートに、細長い短冊片が形成されている請求項3記載の清掃用物品。

【請求項5】 前記短冊片を有するシートが、前記清掃面側の最表面に現れている請求項2ないし4のいずれかに記載の清掃用物品。

【請求項6】 前記繊維束が、前記清掃面側の最表面に現れている請求項2ないし4のいずれかに記載の清掃用物品。

【請求項7】 前記繊維束は、前記基材シートとの接合部からの所定の長さの範囲で、繊維どうしが固着されている請求項1ないし6のいずれかに記載の清掃用物品。

【請求項8】 前記繊維束は複数層設けられ、前記基材シートに最も近い繊維束の目付けが、それよりも表面側に位置する繊維束の目付けよりも大きい請求項1ないし7のいずれかに記載の清掃用物品。

【請求項9】 前記基材シートに、前記基材シートを保持するための保持領域が設けられている請求項3または4記載の清掃用物品。

【請求項10】 前記保持領域には、保持具に装着するための保持空間が形成されている請求項9記載の清掃用物品。

【請求項11】 前記繊維束は、前記保持空間が形成されている基材シートの表面に重ねられて、前記保持空間への保持具の挿入方向に沿って延びる接合線により前記基材シートに接合されている請求項10記載の清掃用物品。

【請求項12】 少なくとも1枚が複数の細長い短冊片を有する複数枚のシートが重ねられ、各シートが複数箇所の接合部で接合されて、前記シート間に前記接合部で挟まれた保持空間が形成されており、前記保持空間を形成する前記シートの表面に繊維束が設けられ、前記繊維束が前記接合部で前記シートに接合されていることを特徴とする清掃用物品。

【請求項13】 前記短冊片と前記繊維束とで刷毛部が形成されている請求項12記載の清掃用物品。

【請求項14】 前記シートの表面に位置している繊維

束の少なくとも一部が、前記接合部から延びて自由端を有する繊維刷毛部が形成されている請求項12または13記載の清掃用物品。

【請求項15】 縦長の前記保持空間が平行に2つ形成されており、前記繊維束はその繊維の延び方向が前記2つの保持空間を横断する向きに配置されて、前記2つの保持空間の中間および、2つの保持空間の外側で、前記シートと前記繊維束とが接合されている請求項12ないし14のいずれかに記載の清掃用物品。

【請求項16】 前記短冊片と、この短冊片に隣接する前記繊維束とが、前記短冊片の途中部分で部分的に接合されている請求項1ないし15のいずれかに記載の清掃用物品。

【請求項17】 前記短冊片を有するシートは、熱可塑性繊維を少なくとも一部に含む不織布、または熱可塑性樹脂フィルムである請求項1ないし16のいずれかに記載の清掃用物品。

【請求項18】 前記繊維束は少なくとも一部に熱可塑性繊維を含み融着可能なものである請求項1ないし17のいずれかに記載の清掃用物品。

## 【発明の詳細な説明】

## 【0001】

【発明の属する技術分野】本発明は、例えば保持具に保持されて清掃用モップとして使用され、または手で保持して使用される使い捨て可能な清掃用物品に係わり、特に埃やゴミの捕捉効果が高くまた剛性の高い刷毛部を有する清掃用物品に関する。

## 【0002】

【従来の技術】従来の室内清掃用などのモップ型の清掃用物品は、木綿等の撚り糸により刷毛部が形成されたものが主である。しかしこの種の清掃用物品は、製造原価が高く、よって使い捨て製品としての使用は困難である。また前記撚り糸の表面に流動パラフィンなどの粘着油剤が塗布されて、この粘着油剤により埃を吸着するものであるため、前記撚り糸自体が埃の捕捉力を有していない。よって髪の毛などの細かな埃の捕捉能力が低い欠点がある。

【0003】また、使い捨ての清掃用物品として、特開平9-154791号公報や特開平9-38009号公報に開示されたものがある。これらは、モップなどの保持具に装着できるようにしたものであり、不織布で形成され、あるいは不織布の周囲部分を細長く切断してはたき部が形成されたものである。

## 【0004】

【発明が解決しようとする課題】しかし、前記各公報に記載の不織布で形成された清掃用物品は、安価で使い捨てに適しているが、清掃用物品自体が平面的であるため、微細な埃を拭き取ることは可能であるが、比較的大きなゴミの捕捉能力が低い。

【0005】さらに使い捨て清掃用物品として繊維によ

り刷毛部を形成したものもあるが、繊維のみの刷毛部では、刷毛部の剛性が低いために、清掃作業中に繊維どうしが絡み合ったり繊維が丸まったりして、実質的に刷毛部として機能する部分が圧縮され、繊維の持つ埃捕集効果を十分に発揮できない欠点がある。

【0006】本発明は上記従来の課題を解決するためのものであり、ゴミの捕集能力が高く且つ形状が安定した刷毛部を備え、低コストで形成できる清掃用物品を提供することを目的としている。

【0007】

【課題を解決するための手段】第1の本発明は、刷毛部を有する清掃用物品において、前記刷毛部が、軟質なシートで細長く形成された複数の短冊片と、繊維束とで形成されていることを特徴とするものである。

【0008】上記本発明では、刷毛部の繊維束により細かな埃を捕捉でき、短冊片で繊維どうしの絡みを抑制でき、また短冊片自体によっても清掃効果を発揮できる。また短冊片を有することで刷毛部が剛性を有し、外力に対して保形性を有するようになる。

【0009】例えば、複数の前記短冊片を有する少なくとも1枚のシートと、少なくとも1層の繊維束とが重ねられて、前記短冊片を有するシートと前記繊維束とが部分的に接合されているものである。

【0010】あるいは、複数の前記短冊片を有する少なくとも1枚のシートと、少なくとも1層の前記繊維束とが基材シートに重ねられて、前記基材シートと前記短冊片を有するシートおよび前記繊維束とが部分的に接合されているものである。

【0011】このように接合されることで、繊維束のぼらつきや絡みを抑制でき、基材シートに隣接する面でも埃の捕捉能力を高められる。

【0012】また、前記基材シートにも細長い短冊片が形成されていてもよい。これにより、様々な形状の被清掃面に対する密着性を高めることができるので、埃の捕捉能力をさらに向上できる。

【0013】本発明の清掃用物品は、前記短冊片を有するシートが、前記清掃面側の最表面に現れているものとして構成できる。この場合、比較的剛性の高い短冊片が最表面に位置しているため、清掃作業中に繊維束が絡んで固まる現象が生じにくくなり、長時間の使用に耐えるものとなる。

【0014】ただし、前記繊維束が、前記清掃面側の最表面に現れているものであってもよい。この場合には、細かな凹凸形状に対して繊維束が入り込んで密着性がよくなるので、細かな埃の捕捉能力が向上する。

【0015】この場合に、前記繊維束が、前記基材シートとの接合部から所定の長さの範囲で、繊維どうしが固着されているものが好ましい。

【0016】このように、繊維束の繊維を少なくとも接合部から所定の長さ範囲で固着することで、繊維束が最

表面に現れていても、清掃作業時の摩擦により、繊維束の繊維が絡まったり、固まるのを防止できる。

【0017】また、前記繊維束は複数層設けられ、前記基材シートに最も近い繊維束の目付けが、それよりも表面側に位置する繊維束の目付けよりも大きいものであってもよい。

【0018】このように目付けを変えると、基材シートの近くに厚い繊維束が位置することになり、清掃作業時に基材シートが清掃面に露出するのを防止でき、また清掃作業時にクッション感を得ることができる。

【0019】また、前記基材シートに、前記基材シートを保持するための保持領域が設けられているものであってもよい。これにより、前記保持領域を手で保持できるようになる。

【0020】例えば、前記保持領域には、保持具に装着するための保持空間が形成される。このように保持具を装着することで、使用者の手や衣服が汚れることが防止される。ただし前記保持空間を手で保持してもよい。

【0021】また、前記繊維束は、前記保持空間が形成されている基材シートの表面に重ねられて、前記保持空間への保持具の挿入方向に沿って延びる接合線により前記基材シートに接合されていてもよい。このように形成することで、保持空間が形成されている部分で、基材シートの表面に繊維束が重ねられたものとなり、清掃作業時に保持具の硬さが被清掃部に影響を与えず、優れた清掃感触が得られる。

【0022】第2の本発明の清掃用物品は、少なくとも1枚が複数の細長い短冊片を有する複数枚のシートが重ねられ、各シートが複数箇所の接合部で接合されて、前記シート間に前記接合部で挟まれた保持空間が形成されており、前記保持空間を形成する前記シートの表面に繊維束が設けられ、前記繊維束が前記接合部で前記シートに接合されていることを特徴とするものである。

【0023】上記本発明では、表裏両面で清掃機能を発揮できるので、清掃面を気にせずに使用できる。また片面づつ使用することで、連続使用時間を向上できる。

【0024】この場合も、前記短冊片と前記繊維束とで刷毛部を形成することで、細かな埃を捕捉でき、繊維どうしの絡みを抑制でき、また短冊片自体によっても清掃効果を発揮できる。

【0025】また、前記シートの表面に位置している繊維束の少なくとも一部が、前記接合部から延びて自由端を有する繊維刷毛部が形成されているものであってもよい。前記繊維刷毛部により、埃を払う機能を発揮でき、清掃能力を向上できる。

【0026】例えば、縦長の前記保持空間が平行に2つ形成されており、前記繊維束はその繊維の延び方向が前記2つの保持空間を横断する向きに配置されて、前記2つの保持空間の中間および、2つの保持空間の外側で、前記シートと前記繊維束とが接合されているものであ

てもよい。

【0027】これにより、保持空間に保持具を装着して、使用者の手や衣服を汚すことなく清掃が可能となる。また保持空間の両端が開口しているものであれば、保持具の挿入方向を変更することで、清掃面を均一に使用できるようになる。

【0028】前記各発明において、前記短冊片と、この短冊片に隣接する前記繊維束とが、前記短冊片の途中部分で部分的に接合されていることが好ましい。

【0029】このように構成すると、繊維束が短冊片と一緒に動くようになり、繊維束が単独で動いて繊維どうしが絡みあったり、繊維が固まるのを防止できる。

【0030】また、前記短冊片を有するシートは、熱可塑性繊維を少なくとも一部に含む不織布、または熱可塑性樹脂フィルムであることが好ましい。これにより、熱融着による接合が可能になり、容易且つ迅速に接合部を形成できる。また不織布を熱風で接合させると、シートが剛性と弾性に富むものとなる。

【0031】また、前記繊維束は少なくとも一部に熱可塑性繊維を含む融着可能なものであることが好ましい。前記シートも同様に熱可塑性繊維を含むようにすることで、シートと繊維束とを熱シールにより容易且つ確実に接合できるようになる。

【0032】

【発明の実施の形態】図1は第1の本発明の清掃用物品の実施の形態を清掃面側から示す斜視図、図2は前記清掃用物品の刷毛部を拡大して示す部分斜視図、図3は清掃用物品を裏側から示す斜視図、図4と図5は清掃用物品を各層別に示す斜視図、図6は清掃用物品の層構造の最も好ましい例を示す部分斜視図である。

【0033】図1と図2に示す清掃用物品1は、図示上面側が清掃面側である。ここで、清掃面側とは、使用時に被清掃物に向けられるのを意図した側を示す。

【0034】前記清掃用物品1は、基材シート2の清掃面側に、下から順に第1の繊維束3、第2の繊維束4、短冊片が形成されたシート5、第3の繊維束6の順に積層されている。この清掃用物品1は短辺の延びる方向が、製造時に上記各層の材料が連続して供給される方向(MD)である。前記基材シート2から第3の繊維束6までの各層は、MDと直交する方向に延びる全層接合線7により一体に接合されている。

【0035】前記基材シート2およびシート5は、熱可塑性繊維(熱融着性繊維)で形成された、または熱可塑性繊維を含む不織布である。前記熱可塑性繊維はPE(ポリエチレン)、PP(ポリプロピレン)、PET(ポリエチレンテレフタレート)繊維、PEとPETの複合繊維、PEとPPの複合繊維、例えば芯がPETまたはPP、鞘がPEの芯鞘構造の複合繊維などであり、不織布は、サーマルボンド不織布、スパンボンド不織布、あるいはスパンレース不織布などである。また、前

記基材シート2およびシート5が、熱可塑性樹脂フィルムで例えばPEフィルム、PPフィルムであってもよい。または前記基材シート2およびシート5が不織布と樹脂フィルムとのラミネートシートであってもよい。

【0036】また、前記基材シート2、および短冊片が形成されたシート5を、前記熱可塑性繊維を熱風で接合させるエアスルー工程で形成された不織布で構成すると、シートが剛性と弾性に富むものとなり好ましい。特に、短冊片を有するシート5を清掃面側の最表面に配置する場合(図6に示す例)、前記シート5をエアスルー工程で形成された不織布とすることが好ましい。

【0037】前記第1の繊維束3、第2の繊維束4、および第3の繊維束6は、熱可塑性繊維の束(層)、あるいは少なくとも一部に熱可塑性繊維が含まれた繊維の束であって、後に示す接合部など特に説明のない部分において、繊維どうしが互いに熱融着されていないものである。前記繊維束は、例えばトウから開繊された長繊維束が使用される。すなわち、長繊維のトウをMDに連続的に供給しながら繊維どうしを分離させ(開繊させ)、所定の幅および厚さとして形成される。また前記所定の幅および厚さの繊維束はシート材料の上に重ねられて前記繊維束と前記シート材料とが部分的に接合され、清掃用物品の寸法に合わせて前記繊維束とシート材料と一緒に切断することによって以下の清掃用物品を得ることができる。

【0038】トウから開繊される長繊維束は、例えばPE、PP、Ne(ナイロン)、レーヨンなどから製造される。この中でも、芯がPPまたはPET、鞘がPEの複合繊維を用いることが好ましい。

【0039】また、前記繊維束を形成する長繊維の繊維度は1~50dtexが好ましく、更に好ましくは2~10dtexである。また各繊維束が異なる繊維度の繊維を含むものでもよい。

【0040】また、前記繊維束として、フィルムをテープ状にスリットし、縦方向へ延伸させたフラットヤーンや、スプリットヤーンと称される熱可塑性フィルムを樹脂の配向方向と直交する方向にかきわけて、繊維状となったフィルムが網目状に接合されているものを使用してもよい。あるいは繊維束として、エアスルー不織布などの嵩高で繊維密度の低い不織布を使用してもよい。

【0041】また、繊維束を形成する繊維は捲縮繊維が好ましい。捲縮繊維を用いると、繊維束が嵩高くなり、さらに捲縮部分に塵や埃を取り込み易い構造となる。特に、トウ繊維から形成された捲縮繊維束を用いることが好ましい。

【0042】前記清掃用物品1を形成する各層の構造およびその積層手順を説明する。図4(A)は、前記基材シート2を示している。スパンボンド不織布、エアスルー不織布などの基材シート2は、中央領域2aの両側部が、短冊片形成領域2b、2bとなっている。図3で



は、前記清掃用物品1の基材シート2を、外面2Bを上向きにして示しているが、この外面2Bには、前記中央領域2aから前記短冊片形成領域2b、2bに渡って保持シート8が重ねられている。この保持シート8は基材シート2と同様にスパンボンドやエアスルー不織布などの不織布で形成されている。ただし、この保持シート8が樹脂フィルムなどで形成されていてもよい。前記基材シート2と保持シート8は、MD方向の長さ寸法が一致しており、MDと直交する方向の幅寸法は、基材シート2よりも保持シート8の方が短くなっている。

【0043】前記基材シート2の外面2Bに保持シート8が重ねられた状態で、前記短冊片形成領域2b、2bに、ギザギザ形状（鋸歯形状）の切込線11、11、…が切込まれて、前記基材シート2および保持シート8に前記切込線11で分離された細長形状の複数の短冊片12、12、…が形成される。ここで、本発明での短冊片とは、少なくとも2mmの幅を有して細長い形状となるようにシートから切り出されたものを指す。

【0044】図4（B）に示すように、短冊片12が形成された基材シート2の清掃面側の表面2Aに、第1の繊維束3が重ねられる。このとき第1の繊維束3は繊維が前記短冊片12と共にMDに向って伸び、且つMDと直交する方向へ繊維束3が拡幅されて、基材シート2の表面2A上で繊維束3が一定の高さとなるように重ねられる。

【0045】そして、基材シート2および外面2Bに位置する前記保持シート8ならびに表面2A側に位置する前記第1の繊維束3が、接合線13および接合線14により一体に接合される。この接合は、熱シール、超音波シールなどであり、前記接合線13および14において、基材シート2、保持シート8および第1の繊維束3が融着接合される。

【0046】一対の前記接合線13、13はMD方向に間隔を開け、前記中央領域2aと短冊片形成領域2b、2bとの境界線に沿って平行に形成される。また前記接合線14は、前記短冊片形成領域2b、2bにおいて、ジグザグ形状（鋸歯形状）に形成される。

【0047】その結果、図2に拡大して示すように、基材シート2および保持シート8に形成された前記短冊片12に第1の繊維束3が重ねられた状態で、この短冊片12と第1の繊維束3とが、短冊片12の長手方向の途中部分を斜めに横切る前記接合線14により部分的に接合された状態となる。前記接合線14により拘束された第1の繊維束3はばらばらに分離しにくく、また絡み合いにくくなる。ただし、短冊片12と第1の繊維束3は接合線14により部分的に接合されているので、短冊片12上で第1の繊維束3はある程度の自由度を持って動くことができ、第1の繊維束3により埃やゴミの捕集効果を発揮できる。

【0048】図5は、第2の繊維束4とシート5とを積

層した状態を示している。前記シート5は、基材シート2と同じスパンボンドまたはエアスルーなどの不織布あるいは樹脂フィルムであり、その平面形状および面積は前記基材シート2と同じである。

【0049】前記シート5は、中央部分が接合領域5aであり、その両側部が短冊片形成領域5b、5bである。前記短冊片形成領域5b、5bでは、シート5の縁部からMDに向けてギザギザ形状（鋸歯形状）の切込線16、16、…が切込まれ、前記切込線16で分離されたMDへ細長い複数の短冊片17、17、…が形成されている。

【0050】図4（A）に示す基材シート2の短冊片12の長さをL1、幅寸法をW1、図5に示すシート5の短冊片17の長さをL2、幅寸法をW2とすると、L2>L1で、W1>W2であり、短冊片17が、短冊片12よりも細長形状となっている。また、個々の短冊片12および17は、幅が2〜50mmで、長さが10〜100mmの大きさの範囲で形成されている。

【0051】そして、前記シート5の裏面5B側に第2の繊維束4が積層されている。製造工程では、シート5の裏面5Bが上向きとされ、この裏面5B上に第2の繊維束4が重ねられる。繊維束4は繊維が短冊片17の延びるMDに向けられた状態で、MDと直交する方向へ拡幅されて、一定の高さとなるように前記シート5の裏面5Bに重ねられる。

【0052】そして、前記短冊片17の延びる方向の途中箇所において、前記短冊片17と第2の繊維束4とが、接合部18によって部分的に接合されている。この接合部18は熱シールまたは超音波シールで融着される。図5に示すように、前記接合部18は、MDと直交する方向に並ぶ複数の短冊片17において一個おきに形成されている。すなわち接合部18が形成された短冊片17と接合部18を有しない短冊片17とが交互に並んでいる。ただし全ての短冊片17が接合部18を有するものであってもよい。

【0053】図2の部分拡大図に示すように、第2の繊維束4は、短冊片17の下に重ねられ、短冊片17の途中部分で、短冊片17と第2の繊維束4とが接合部18で部分的に接合されているため、第2の繊維束4が絡み合ったり、丸まったりしにくくなり、短冊片17により形状を保持された状態となっている。

【0054】この清掃用物品1の製造工程の最終段階では、図4（B）に示す、基材シート2と保持シート8並びに第1の繊維束3が積層されて接合された第1の積層体の上に、図5に示す第2の繊維束4とシート5とが積層されて接合された第2の積層体が重ねられる。このとき第1の繊維束3の上に第2の繊維束4が乗るようにして前記第1と第2の積層体が重ねられる。

【0055】そして、図1に示すように、第2の積層体の前記シート5の表面5A上に第3の繊維束6が重ねら

れる。この第3の繊維束6は繊維がMDに向くようにし、MDと直交する方向へ拡幅されてほぼ均一な嵩となるように重ねられる。そして、保持シート8、基材シート2、第1の繊維束3、第2の繊維束4、シート5、第3の繊維束6と一緒にMD方向に延びる中央線に沿う前記全層接合線7により接合されて一体化される。この全層接合線7は熱シール、超音波シールなどの融着シール線であり、この全層接合線7によって各層が一体化されて融着接合される。

【0056】図1および図2に示すように、この清掃用物品1は、基材シート2の清掃面側および左右両側に、刷毛部26が形成された構造であり、この刷毛部26は、基材シート2の短冊片12、第1の繊維束3、第2の繊維束4、シート5の短冊片17および第3の繊維束6の集合体により形成されている。

【0057】まず、図1で上向きに示されている清掃面側で、床や家具などを拭くと、表面に現れている第3の繊維束6によって細かな埃やゴミを捕集することができ、且つ刷毛部26において、繊維束3、4、6により細かな埃やゴミを捕集できるとともに、短冊片12と17も埃などを払う機能を発揮する。このとき、短冊片12と17で払った埃を繊維束3、4、6で捕捉することが可能である。

【0058】また、第2の繊維束4と第3の繊維束6との間には、短冊片17が介在しているため、清掃を繰り返しているときに、第2の繊維束4と第3の繊維束6とが互いに絡み合うことがなく、刷毛部26の形態を長期間維持できる。

【0059】さらに、第1の繊維束3と第2の繊維束4は、それぞれ部分的に短冊片12と短冊片17に接合されているため、繊維束3、4が丸まったり、絡んだりすることがなく、長期間清掃を行なっても、刷毛部26が潰れ難くなり、刷毛部26の保形性に優れる。

【0060】完成した清掃用物品1の外側面では、図3に示すように、基材シート2と保持シート8とが接合線13と接合線13とで接合されているとともに、接合線13と接合線13との間に前記全層接合線7が形成されるため、前記中央領域2aの外側の保持領域において、基材シート2と保持シート8との間に、接合線13と全層接合線7との間に2つの平行な保持空間20、20が形成される。

【0061】よって、図3に示すように二股構造の保持具21により前記清掃用物品1を外側面から保持することができる。前記保持具21は、二股に分かれた挿入部22、22と把持部23とを有している。挿入部22、22が前記保持空間20、20内に挿入される。そして把持部23を保持して清掃を行なうことができる。

【0062】清掃の際に保持具21から清掃用物品1が容易に脱落しないようにするための構造を種々採用することが可能である。

【0063】まず、前記挿入部22、22の下面に、細かく配列され且つ先端が鋭角な鋸歯状の凸部22aを多数形成し、この凸部22aが基材シート2に向けられた状態で、挿入部22、22を保持空間20、20に挿入できるようにする。挿入された状態で鋸歯状の凸部22aと基材シート2との摩擦係数が大きくなり、これにより清掃用物品1が容易に脱落するのを防止できる。

【0064】または、保持具21における挿入部22、22の基端部分に、係止ファスナー24を固定しておく。係止ファスナー24は、細かな鉤状またはきのこ形状の突出部が形成されたものである。この係止ファスナー24が基材シート2の裏面2Bに係止されることで、保持具21からの清掃用物品1の脱落を防止できる。

【0065】また、二股の一方の挿入部22の先端部分に連結部材25を回動自在に設けておき、挿入部22、22が保持空間20、20に挿入され、挿入部22、22の先端が保持空間20、20を貫通して抜け出した時点で、連結部材25を回動させ、連結部材25を他方の挿入部22の先端に凹凸嵌合などで係止させる。これによっても、保持具21からの清掃用物品1の脱落を防止できる。

【0066】前記凸部22a、係止ファスナー24、連結部材25による抜け止め手段は、その全てを備えても良いし、そのいずれか少なくとも1つの手段を備えてもよい。なお、前記抜け止め手段を有する保持具21は、本発明の清掃用物品1に限られず、どのような清掃用物品であっても使用することができる。

【0067】また前記清掃用物品1は、図3に示すように対称形状であるため、保持具21に対し清掃用物品1を図3の方向から装着した状態で、清掃作業を行ない、その結果、清掃用物品1が局部的に汚れたときに、清掃用物品1を図3に示す向きから180度回転させた向きで保持具21に保持させてもよい。このように向きを変えて使用することで、清掃用物品1の各部を片寄りなく均一に使用することができる。

【0068】なお、前記保持具21の挿入部22を容易に変形する素材で形成すると、保持具21に保持された清掃用物品1の形状を任意に湾曲させることができる。また把持部23を伸縮自在な構造とし、把持部23を長く伸ばして清掃を行なうようにしてもよい。

【0069】また前記清掃用物品1において、前記接合線13、13によって少なくとも一の繊維束が接合されることで、保持空間20、20内に挿入される保持具21の清掃面側に繊維束が位置するようになるので、清掃面側の厚みが増し、清掃作業時に保持具の硬さが被清掃面に影響を与えず、優れた清掃感覚が得られる。

【0070】図6は前記第1の本発明の実施の形態の変形例の清掃用物品1Aを示す斜視図である。

【0071】図6に示す清掃用物品1Aは、図1ないし図5に示した清掃用物品1の各層の積層順番を変えたも

のである。

【0072】この清掃用物品1Aには、エアスルー工程で得られた不織布で形成された最外層基材シート15が設けられ、この最外層基材シート15の表面にスパンボンド不織布などで形成された基材シート2が重ねられている。そして、前記基材シート2の清掃面側である表面2A上に、下から順に第1の繊維束3、第2の繊維束4、第3の繊維束6が重ねられ、最表部に、短冊片17が形成されたシート5が重ねられている。このシート5は不織布または樹脂フィルムで形成されるが、エアスルー不織布で形成されることが好ましい。

【0073】そして、最外層基材シート15、基材シート2および、第1の繊維束3が、図4(B)に示したのと同じ接合線13、13で互いに接合されている。そして、最外層基材シート15から短冊片17を有するシート5までが、中央部に形成された全層接合線7によって一緒に接合されている。

【0074】また、第3の繊維束6と、その上のシート5とが、図5に示したのと同様に、短冊片17の途中に位置する接合線18によって接合されて、短冊片17とその下の第3の繊維束6の繊維の一部とが部分的に一体化されていてもよい。また、図4(A)と同様に、基材シート2に複数の短冊片12が形成され、図4(B)に示すように、前記短冊片12と第1の繊維束3とがジグザグ形状の接合線14で接合されていてもよい。

【0075】また、最外層基材シート15の外面に、図3と同様に保持シート8が接合され、最外層基材シート15と保持シート8との間に保持空間20、20が形成されているものであってもよい。

【0076】図6に示す清掃用物品1Aでは、清掃面側の最表面に、短冊片17を有するシート5が設けられているため、床や家具などの被清掃部を拭いたときに、この被清掃部にシート5が優先的に当たることになるため、その下に位置する各繊維束3、4、6の繊維が絡まりあったり、被清掃部との摩擦により塊状になるのを防ぐことができる。特に、第3の繊維束6の一部の繊維がその上に位置する短冊片17に接合線18によって接合されていると、第3の繊維束6の繊維が絡まりにくく、塊状になりにくい。また最表部のシート5を剛性が高く柔軟なエアスルー不織布で形成すると、被清掃部との摩擦で短冊片と繊維束とで形成された刷毛部26が変形しづらく、長期間の使用によっても形がくずれにくくなる。

【0077】また、図6に示すように、清掃面側の最表部に短冊片17が現れるものでは、個々の短冊片17が長い方がよい。よって短冊片17を分離する切断線16が全層接合線7まであるいはその近傍まで至っているものが好ましい。または前記切断線16がシート5の全域をMD方向に横断し、全層接合線7で接合される前の状態において、短冊片17が互いに分離されているものであってもよい。

【0078】本発明の清掃用部品は、前記短冊片と前記繊維束の繊維とで形成された刷毛部26によって、大きな塵と小さな埃を効果的に拭取ることができるが、図6に示すように清掃面側の最表部に、エアスルー不織布などで形成された短冊片17が位置していると、長期間使用しても刷毛部26の形を保つことができる。

【0079】この点に関して、図1ないし図5に示す清掃用物品1は、清掃面側の最表面に第3の繊維束6が位置している。よって、被清掃部との長期間の摩擦により、第3の繊維束6に絡みや塊が生じるおそれがある。

【0080】そこで、図1ないし図5に示す前記清掃用物品1において、最表部に現れている第3の繊維束6に対し、油剤、ワックス、HMA（ホットメルト）等の樹脂を固着剤として塗布して繊維の動きに対する自由度を阻害させる（繊維のぼらつきを抑制する）ことにより、払拭時に繊維に過剰な絡みや塊が生じるのを防止することができる。

【0081】この場合の樹脂を塗布する範囲としては、繊維束6の清掃面側の表面のみに前記固着剤をスプレー塗布して、第3の繊維束6の表面の繊維のみを固着してもよいし、前記全層接合線7から所定の範囲までに部分的に固着剤を塗布し、第3の繊維束6の自由端側の繊維は自由状態としてもよい。このようにすると、繊維束6による埃の捕捉効果を低減させることなく、繊維束6の繊維の絡まりを防止できる。またこれらの固着剤は常温で固体であるものが好ましい。

【0082】例えば、ワックスで固める場合に繊維束6に対するワックスの割合としては、第3の繊維束6に対する質量比が0.5～25%とすることが好ましい。0.5%以下では繊維の絡みを効果的に防止することができず、また25%以上であると繊維が強固に固まり過ぎ、繊維が十分に起毛せず埃の捕捉効果が低下する。

【0083】また、HMAは粘度が高いと着圧性は良好であるが逆に繊維が絡まるため、粘度の低いHMAを使用することが好ましい。またはワックスと粘度の低いHMAとを混合したものであってもよい。

【0084】なお、繊維束6に樹脂を塗布する方法ではなく、溶剤や熱で繊維束6の繊維を融かした後に再度固めることで、繊維の絡みを防止してもよい。この場合にも、繊維束6の基端のみを強めに固めて絡みを防ぎ、繊維束の先端部分の自由度を残すことで起毛効果を発揮できるようにしてもよい。

【0085】さらに、図6に示す清掃用物品1Aの第2の繊維束4と第3の繊維束6のそれぞれにおいて、各繊維束の繊維どうしを、前記と同様に固着剤や融着により接合させてもよい。

【0086】また図1に示す前記清掃用物品1において、第3の繊維束6を全層接合線7のみで接合するのではなく、前記全層接合線7と間隔を開けて位置する他の接合線によって、前記第3の繊維束6を、その下のシ

ト5または基材シート2に接合することによっても、第3の繊維束6の繊維の絡まりや塊の発生を防止できる。

【0087】また、図1に示す清掃用物品1および図6に示す清掃用物品1Aの双方において、基材シート2に最も近い第1の繊維束3の目付けを、その上に位置する第2の繊維束4や第3の繊維束6よりも大きくしておくことが好ましい。このようにすると、長期間清掃を繰り返して、刷毛部26の短冊片や繊維束が絡まったり塊状になったときに、基材シート2が刷毛部26から露出することがなく、この基材シート2が被清掃部に直接に当た

るのを防止できる。

【0088】図7は第2の本発明の清掃用物品30を示す部分斜視図、図8はその断面図である。

【0089】この清掃用物品30では、不織布などのシート31と両側部にMD方向に向く複数の短冊片31aが形成されている。また前記シート31に重ねられる他のシート32の両側部にも同様にして短冊片32aが形成されている。この短冊片31a、32aは前記シート31と32の両側部に複数の切込線を入れることで形成されている。

【0090】シート31の下側には繊維束33が重ねられ、シート32の上には繊維束34が重ねられて、シート31、32および繊維束33、34が中央接合線35と、側部接合線36、36とで一体に融着接合されている。前記側部接合線36、36の外側には、前記短冊片31aと短冊片32aおよび繊維束33、34との集合体により刷毛部37、37が形成されている。

【0091】側部接合線36と側部接合線36とで挟まれた部分が保持領域38となっており、この保持領域38では、シート31とシート32との間に、中央接合線35で分離された2つの保持空間39、39が形成されている。この保持空間39、39に図3に示すような保持具21の挿入部22、22が挿入される。または中央接合線35を設けずに、側部接合線36と側部接合線36との間に比較的広い保持空間が形成され、この保持空間に平坦形状の保持具が挿入されてもよい。

【0092】さらに、保持領域38では、各接合線35と36との中間において、MDと直交する方向に延びる切断線41が一定の間隔を開けて間欠に形成されており、この切断線41により、シート31、32と繊維束33、34とが一緒に切断されている。

【0093】その結果、清掃用物品30の表裏両面の保持領域38において、前記切断線41が形成されている部分には、接合線35と36から繊維が延びる繊維刷毛部42が形成されている。また切断線41と切断線41との間の切断線41が形成されていない部分では、接合線35と接合線36とを渡って延びる繊維ブリッジ43が形成されている。

【0094】この清掃用物品30では、両側部に延びる刷毛部37、37が、繊維束33、34と短冊片31

a、32aとの集合体であるため、刷毛部37全体の剛性が高く、短冊片31a、32aで埃やゴミを払い、繊維束33、34で埃などを捕捉することができる。

【0095】また保持領域38では、切断線41により切断された繊維束34で形成された繊維刷毛部42が埃を払う機能を発揮でき、また払われた埃を繊維ブリッジ43で捕捉することができる。よってこの清掃用物品30は、刷毛部37、37での清掃機能のみならず、表裏両面での保持領域38での清掃機能も発揮でき、各方向に向けた状態で効果的な清掃ができる。

【0096】また図8に示すように、前記シート31と、前記繊維刷毛部42を有する繊維束33との間に、切断線41を有しない目付けの大きい繊維束またはエアスルー不織布の層44が設けられ、シート32と、前記繊維刷毛部42を有する繊維束34との間に、切断線41を有しない目付けの大きい繊維束またはエアスルー不織布の層45が介在していてもよい。

【0097】図9は第3の本発明の他の実施の形態の清掃用物品50を示す斜視図である。この清掃用物品50は、シート51の両側部に複数の切込線が入れられて複数の短冊片51aが形成され、シート52の両側部にも同様にして複数の短冊片52aが形成されている。シート51の下側には繊維束53が重ねられ、シート52の上側には繊維束54が重ねられて、シート51、シート52、繊維束53、繊維束54が、平行に延びる接合線55と56とで一体に融着接合されている。

【0098】前記接合線55と56の両側では、短冊片51a、短冊片52aおよび繊維束53、繊維束54の集合体による刷毛部57が形成されている。

【0099】接合線55と接合線56との間では、シート51とシート52の間に保持空間が形成されている。この保持空間に保持具61が挿入されるが、このとき清掃用物品50を捻るようにして保持具61に装着すると、刷毛部57が螺旋状に延びる、立体的な刷毛部57を形成できる。

【0100】この清掃用物品50は狭い隙間などを清掃する際に、周囲全方向にわたって刷毛部57が延びているため、埃やゴミの捕捉効果を高くできる。

【0101】なお、図7の実施の形態において、シート31の短冊片31aと、シート32の短冊片32aとの間に、さらに繊維束が挟まれた構造であってもよい。同様に、図9に示す実施の形態においても、シート51の短冊片51aとシート52の短冊片52aとの間に、さらに繊維束が挟まれた構造であってもよい。

【0102】そして、図7と図9の実施の形態において、短冊片の長手方向の途中部分で、この短冊片と繊維束とが部分的に接合されているものであってもよい。

【0103】また、前記各実施の形態において、繊維束が捲縮繊維であると、繊維そのものが埃を捕集しやすくなる。またトウから開繊された繊維やスプリットヤーン

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などの繊維をMDに向けて延ばした状態で、シートに接合し、その後にシートと共に繊維を切断すると、繊維が捲縮し、刷毛部においては短冊片よりも繊維束の方が短い構造となる。このようにすると、短冊片による埃やゴミの払拭機能を高め、払拭された埃などを捲縮繊維で捕捉するという清掃作業が行なえるようになり、繊維と短冊片との集合体による清掃機能を有効に発揮できる。

【0104】また、繊維束や短冊片に着塵剤を塗布することで埃の吸着捕捉効果を高めることができる。着塵剤は、例えば界面活性剤、ミネラルオイル、ワックスなどである。あるいは接着力を弱めたアクリル系接着剤やホットメルト接着剤を塗布してもよい。

【0105】また前記着塵剤の他、例えば消臭剤、保湿剤、抗菌剤等の物質を含有させることができる。

【0106】さらに各実施の形態において、保持領域に形成される接合線と接合線との間においてシートに弾性収縮性を持たせておくと、保持具に保持させたときに、保持具に密着でき、保持具から清掃用物品が脱落しにくくなる。

【0107】また各実施の形態において、短冊片を有するシートに使用する不織布は、スパンボンドやエアースルー法で形成されたものに限らず、サーマルボンド、スパンレース、ポイントボンド、メルトブロー、ステッチボンド、ケミカルボンド、ニードルパンチなどで形成されたものであってもよい。また不織布に代えて、ウレタン、スポンジ、織布、ネット、ワリフなどの短冊状に加工可能な素材であってもよい。

【0108】また短冊片を有するシートが不織布で形成されている場合、繊維束と組み合わせたときの使い易さや加工技術上の点において、目付けが10～100g/m<sup>2</sup>で厚みが0.5～5mmのものが好ましい。また不織布のMD方向の幅は80～250mmであることが好ましい。

【0109】

【発明の効果】以上のように本発明の清掃用物品は、刷毛部が、短冊片と繊維束とで形成されているため、繊維束が絡んだり丸まったりしにくくなり、刷毛部の保形性を高めることができる。特に短冊片と繊維束とを部分的に接合しておく、刷毛部を形成する繊維束の剛性を高くでき、長期間使用しても繊維束が丸まったり縮まったりするのを防止できるようになる。

【図面の簡単な説明】

【図1】第1の本発明の清掃用物品の実施の形態を示す斜視図、

【図2】図1の清掃用物品の刷毛部を示す部分拡大斜視

図、

【図3】図1の清掃用物品を裏面側から示す斜視図、

【図4】(A)(B)は図1に示す清掃用物品の基材シートおよび基材シートと第1の繊維束との積層体を示す斜視図、

【図5】図1に示す清掃用物品の第2の繊維束とシートとの積層体を示す斜視図、

【図6】第1の本発明の清掃用物品の変形例を示す斜視図、

【図7】第2の本発明の清掃用物品の実施の形態を示す斜視図、

【図8】図7の清掃用物品の断面図、

【図9】第2の本発明の清掃用物品の変形例を示す斜視図、

【符号の説明】

- 1 第1の実施の形態の清掃用物品
- 2 基材シート
- 2a 保持領域
- 3 第1の繊維束
- 4 第2の繊維束
- 5 シート
- 6 第3の繊維束
- 7 全層接合線
- 8 保持シート
- 11 切込線
- 12 短冊片
- 13, 14 接合線
- 17 短冊片
- 18 接合部
- 21 保持具
- 26 刷毛部
- 30 第2の実施の形態の清掃用物品
- 31, 32 シート
- 31a, 32a 短冊片
- 33, 34 繊維束
- 37 刷毛部
- 38 保持領域
- 42 繊維刷毛部
- 43 繊維ブリッジ
- 50 第3の実施の形態の清掃用物品
- 51, 52 シート
- 51a, 52a 短冊片
- 53, 54 繊維束
- 61 保持具

【図1】

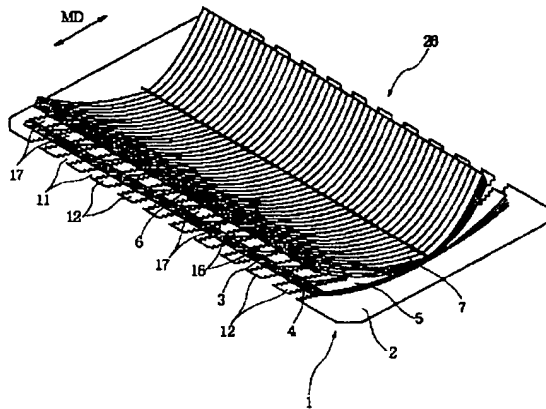


図 1

【図2】

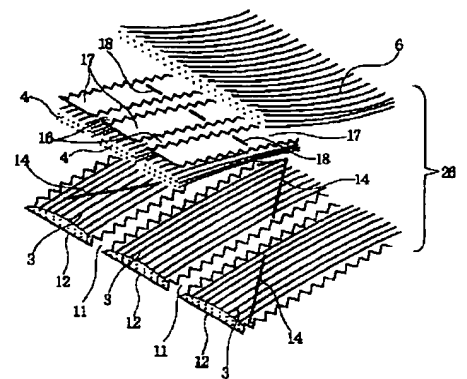


図 2

【図3】

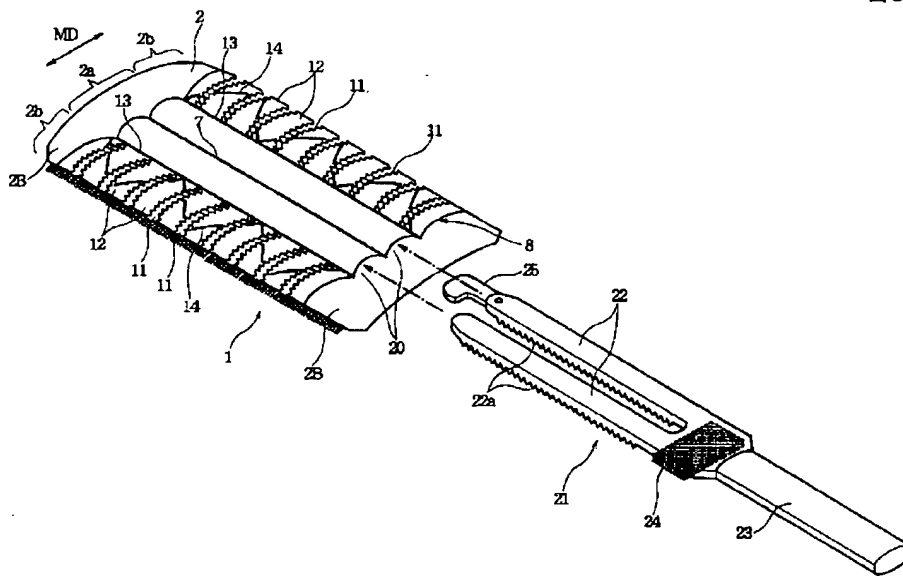


図 3

【図5】

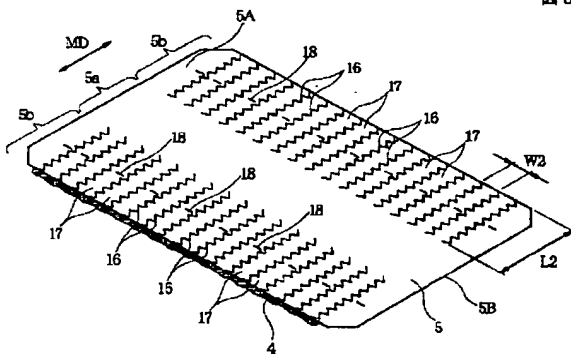


図 5

【図8】

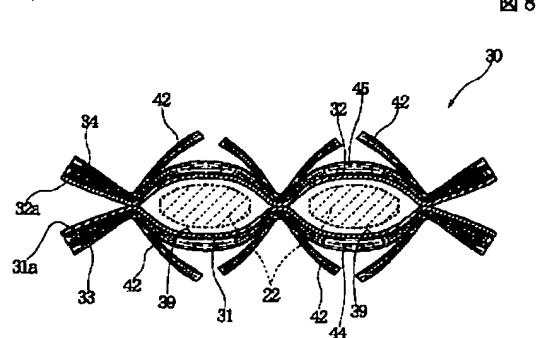
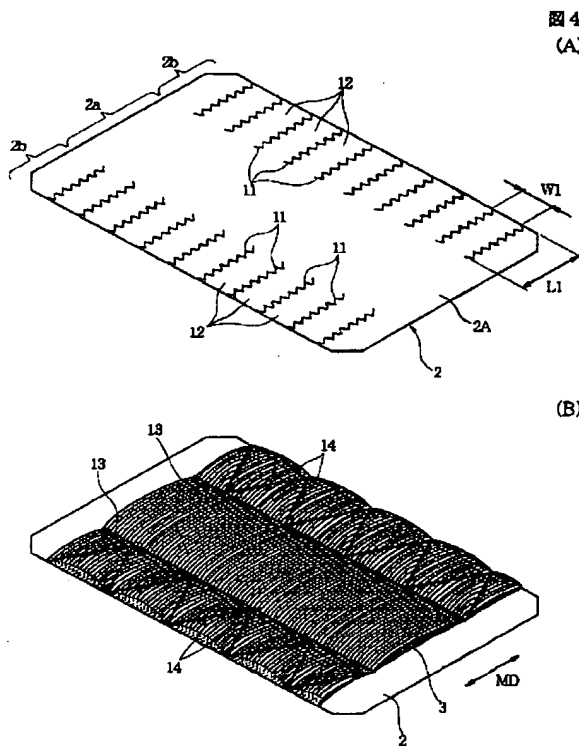
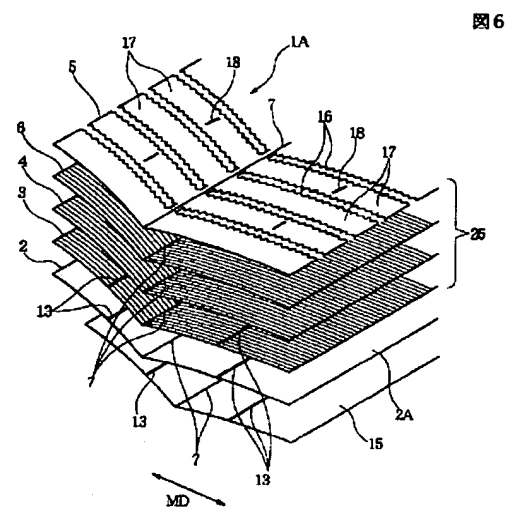


図 8

【図4】

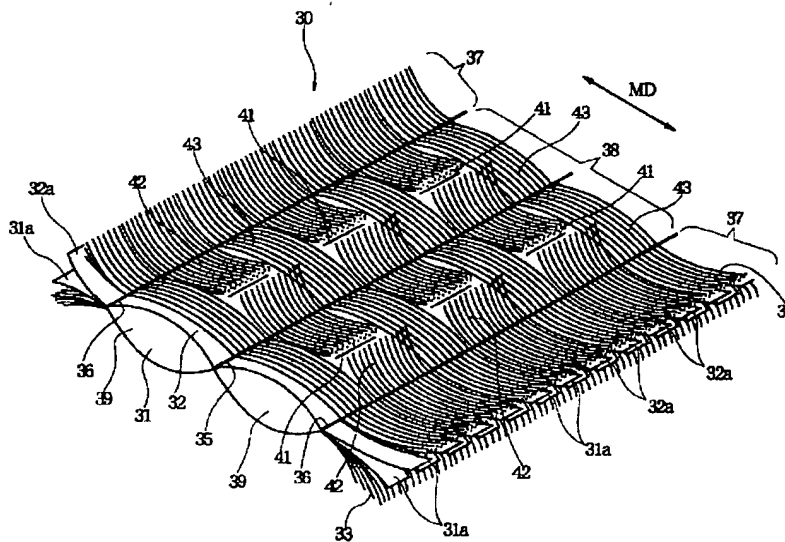


【図6】

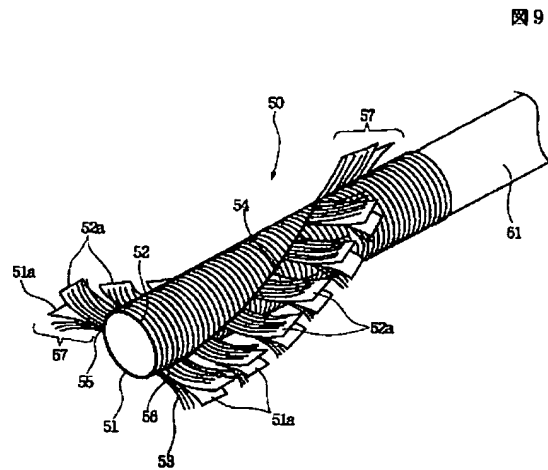


【図7】

図7



【図9】




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フロントページの続き

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